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# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 1.

SAN FRANCISCO, SATURDAY, JANUARY 4, 1902.

THIRTY-THIRD YEAR.  
Office, 330 Market St.

### The Story of the Potato Worm.

What we call in California the potato worm is an old citizen, but his story has just been told. People who now wear white hair, earned in California, have told us that in their boyhood they used to see the wasted places on the surface of the exposed potatoes in the field and find the hateful black strings through the substance when it came boiled upon their plates. Our own experience dates back to 1875, and it was then very abundant. Recently it seems to have widely extended and each year it does an amount of mischief. The insect seems to be chiefly troublesome to the potato in California. In the Eastern States it chews tobacco and in various parts of the outside world it chews either potato or tobacco, though in Algeria and Australia it figures most largely on the former, as it does in California.

As we have already stated in these columns the University Experiment Station has just completed a study of this insect and fixed many interesting points in its life history through many months close observation by Mr. W. T. Clark, an advanced student in entomology. The name of the insect is *Gelechia operculella*, and its nearest relative in California agriculture is the peach moth. The potato moth parent of the worm is shown with wings closed and extended in an adjacent engraving. The actual size is shown by the faint crossed lines. It is grayish brown with yellowish tints intermixed. When at rest the moth folds its wings, roof like, and is then but one-third of an inch in length—so that it is a small affair. This moth lays a minute oval egg, pearl tinted, and the eggs are shown in another picture in enlarged form as they were deposited about the eye of a potato. The worms hatched from these eggs begin to burrow into the stem of the potato plant or into the potato itself, according to the location of the egg by the moth. Sometimes great injury is done to the plants by the work of the worms early in the season and the field may be lost in that way. Later in the season the worm may work in the stem of the plant for a while, and then, as the stem hardens, he may make his way to a tuber and finish his fattening there. Sometimes again, later still in the season, the egg may be placed directly on the potato, exposed by the cracking or shifting of the soil, or after it has been dug and left on the surface, or, indeed, after the potatoes have been sacked and stored, the later moths may lay eggs and the worms infest the tubers. Thus the potato is the prey of the insect the whole season long. Mr. Clark's studies show that in summer the whole life history of the insect, from egg to egg again, may be accomplished in from sixty-three

to sixty-nine days, and in winter, in our bay climate, the whole course can be run in eighty-five days. Thus the insect is always active, winter and summer, and numerous broods have im-



Magnified Views of the Potato Moth.

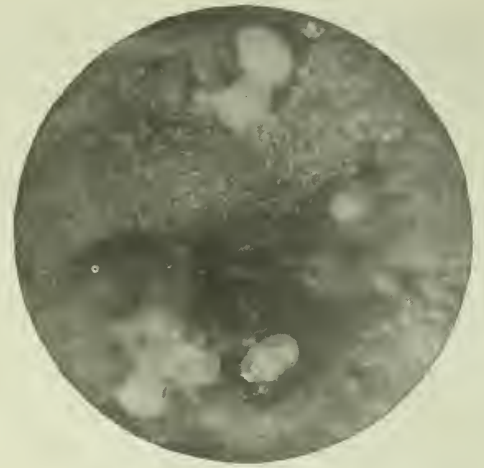
mense powers of multiplication during the year. Other pictures show the insect and its work in various forms. The tuber with a collapsed patch with the holes made by the worms and the tuber with the ugly seam in its side, both show the work of the pest. Two views of the same potato show the chrysalis of the insect in place and the opening of the chrysalis after the moth has escaped. Still an-



Surface Signs of the Work of the Potato Worm.

other picture shows the presence of a chrysalis placed in a wound made in the potato by a mole-cricket or what is commonly called in California the potato bug, about which we shall borrow something from Mr. Clark at another time.

Concerning warfare against this very destructive pest, Mr. Clark's studies are very direct suggestions. He finds the insect on other solanaceous plants, therefore the fields should be cleared of the several species of "nightshade" which are common in California. He finds that the moths are freely attracted by light traps, and such a trap affords a very good way to ascertain when the moths are flying. Set a few, and whenever moths are caught go about trapping systematically. When the uppers of the potato plants are seen to be affected, cut off the



The Egg—Enlarged Twenty Diameters.

stems below the injury and burn them. By watching one soon learns to detect the infested tops at a glance. Another, and the most effective, recourse to save the potatoes in the field is to have them deeply covered with earth. In some soils this can be had by deep planting, but in any case throwing the loose soil toward the vines, or "hilling" them, when it can be done without causing the ground to dry out too



Chrysalis on Surface of Potato—Closed and Open.



Chrysalis in Wound Made by Cricket.

much, is a good safeguard. Where flat culture is essential to retention of moisture, hilling at the last cultivation may be practicable. Potatoes must not be left exposed either during digging or afterward. They should not be allowed to lie over night in the field. They should not be covered with the "tops" after digging, for the tops may be full of worms. Even in sacks they are not safe in the field unless the piles of sacks are covered with some closely woven cloth. Even in storerooms the destructive work goes on. Potatoes ought really to be treated with carbon bisulphide to destroy the insect life in them, and then stored in close rooms to which new moths cannot gain access.

Potato fields should be cleaned up thoroughly after digging, for old vines and small tubers will help the insect to carry over. Sheep are good to clean up all this refuse. Flooding the field for two or three weeks seems in one case at least to have killed everything. Seed potatoes should be free from the pest, for the moth will breed from infested seed.

THE sheep license case of Sierra and Plumas counties, which has been in the United States Circuit Court at San Francisco for the past two years, has been decided by Judge Morrow in favor of the counties. The case will be taken to the United States Court of Appeals by Wheeler & Ridenour's attorneys. The amount involved is something over \$2000.



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E. J. WICKSON Horticultural Editor

San Francisco, January 4, 1902.

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## The Week.

As we go to press on New Year's eve the sounds of revelry are rising in the city streets and evidently the younger generation will, with customary tumult and racket, escort the old year to the border of infinity, whence will come the new occupant of the pedestal of time. All the senses now assure one that this new occasion will lack nothing of the old celebration—in fact, to our attenuating nerves the sounds are shriller and the sights more alarming than of old. It would seem that even the man in the moon could see the flash and hear the roar of the New Year jubiliations, which even now are beginning on the Atlantic coast and will extend westward over the wide American domain until they reach that fabled Pacific point where one does not know whether it is yesterday or to-morrow. This is the point, indeed, at which New Year's celebrations attain their acme.

Agriculturally, most people will be glad to have a change in the calendar. The passing year, though great in some respects, has been disappointing in its closing weeks. Winds dry and destructive have taken the place of winds wet and refreshing, and very much of the State will look more anxiously for weather reforms than for other blessings of the New Year.

Holiday honey jabbering and horse play has displaced traffic on the exchanges and values are to a certain extent in abeyance. Wheat is the same as a week ago, but little doing. Four straight wheat cargoes, two mixed wheat and barley and three of straight barley have gone out. The clearances for the half year now ending are the largest since 1897, and comprise 216,000 tons, with a valuation of \$4,378,000; but 1897 was considerably ahead of this, viz.: 350,000 tons, valued at \$10,568,000. Barley, oats, corn and beans are all about the same as a week ago. Bran is a little stiffer; in fact all mill offal is in better shape. Hay is stronger, owing to absence of rain. All fresh meats are unchanged, but prices are well maintained. Butter is the same—firm for choice fresh. Cheese is weaker, as the popular mild fresh is absent and people do not take kindly to the old or off grade which is offered. Eggs are quiet and perhaps a little shaky, but no decline has occurred. Turkeys are lower than last week, for though arrivals are light, many stored turkeys have to be pushed out. Young chickens, especially large broilers, are in demand. Potatoes and onions are quiet and steadily held. Fine apples are scarce and high as ever. Auctioned oranges have gone low; they are jobbing at about the same as last

week. Grape fruit is lower; a few boxes break the market. Lemons are quiet and not many fine ones here. Dried fruit and nuts are clearing out unusually well and it looks as though it would be all out of the wholesalers hands in sixty days. This promises well for the new crop. Hops and honey are held about as before. Wool is in demand, but absent.

It seems beyond question now that raisin growers must reorganize on a new basis or abandon the idea of controlling their own product. The proposition to give the Association leases to vineyards fails for lack of support among the growers, and by recent decision of the courts, it is shown that under the present contract with the growers the Association is powerless to carry on the objects for which it was organized. In accordance with these views President Kearney calls a meeting of Association members to assemble in Armory Hall, Fresno, at 10 o'clock on Saturday, January 4th, to consider a proposal instructing the directors to wind up the affairs of the Association, or to take such other action as the meeting may deem expedient. Mr. Kearney adds that it is to be hoped that those who are not satisfied with the lease proposal will avail themselves of the opportunity this meeting affords to propose something better, and that they will utilize the intervening time in preparing to do so. In order that there may be a full and free discussion of the subject, all raisin growers, whether members of the Association or not, are invited to attend. This will give opportunity to show forth the will of all in the growing interest as to further co-operative effort, and they should give heed to it.

Prune prospects are brightening and the present feeling will no doubt have an effect upon the disposition to plant, which should be wisely directed toward securing large prunes from soils which can be depended to produce them by virtue of their depth, richness and assurance of adequate moisture. It is announced this week from San Jose that the large demand in the past two weeks, together with the rapid decrease in the supply and the centralizing of the crop into a few strong hands, has caused a rise in the price of the new crop. No packer in Santa Clara county will fill an order for Santa Clara goods below 3½ cents. The price for the old crop is also stronger, though the poor quality and the big lot of fruit now being dumped on the Eastern market serves to keep the price down. The Association announces that in the past few weeks about 100 carloads of prunes had gone abroad and that there was expected a demand for about 200 more. All this sounds well for the prune, and it should be considered in connection with the fact that the acreage of poor prunes, or prunes in poor places, is constantly being reduced by abandonment. The good California prune is all right.

It is a commercial necessity apparently that to make some lands yield anything to their owners there must be a larger supply of people who are willing to do hard work at prices which the traffic will bear. It is, of course, delightful to think of a future California population springing from the foundation of select Americans who have the grit and enterprise to come so far and establish themselves upon the American family plan. But though these are coming in considerable number they can nearly all seem to find something easier to do than to grow sugar beets at the factory prices. We know no way by which owners of beet lands can be forced to grow beets at such prices nor the factory owners be forced to pay more for beets than they desire to. Consequently there arises the necessity of getting labor which will enable the land owners to meet the factory prices either by direct production or by lease to those who will accept what there is in the business. It is announced from Stockton that a party of about 100 Greek laborers arrived there from Ogden and they will be employed on the Naglee Burke tract, near Banta. They have been cultivating sugar beets in Utah and are said to be experts in that work. The Burke ranch is said to be planted to sugar beets, and wishing to secure the best of help, the foreigners were brought from Ogden. The sugar beet industry is not the only one which absolutely needs a labor supply at living wages and, sentiment aside, it must have it or lands and improvements must lie idle.

## QUERIES AND REPLIES.

### Barren Almond Trees.

TO THE EDITOR:—I have on Howell mountain a number of twelve-year-old Texas Prolific almond trees which have only borne two good crops. They bloom well and sometimes show large numbers of nuts, which fall off when about the size of a pea. We do not have heavy frosts and our vineyard has never been frosted to any extent: besides the almonds are on a hillside. Should they have bitter almonds among them? We have a few seedling trees which seem to bear better. Does the soil need a fertilizer? Most of the trees are heavily wooded and perhaps thinning out might help them. Would heavy and continuous rains when the trees are in bloom cause the nuts to fall?—READER, Liddel, Napa county.

It is a difficult matter to determine just what causes the behavior of the almond trees which you describe. It is quite common in various parts of the State with certain varieties, while others seem to be more regular in bearing. There is doubt whether the dropping of the small nuts is due to lack of pollination or to frost injuries. It may be due to either and each may operate in different localities or both may act together. It is certainly true that some trees have been caused to bear regularly by the presence of other varieties blooming at the same time. If your seedling trees are near the others and bloom at about the same time it would seem as though the blight must be due to some other cause than lack of pollination, but if they are too distant the budding-in of these seedlings into the unsatisfactory trees might improve their bearing. It is true that a certain amount of thinning to throw more vigor into the remaining wood might have a good effect in producing stronger bloom. It is also a fact that long continued rains during the blooming season are unfavorable for setting of the fruit. It is not likely that any kind of fertilizer would improve the bearing of the trees providing they are fairly healthy and vigorous. Heavy frosts are not necessary to injure the fruit of the almond, and vineyards might escape frost injury in the same locality where the almond would suffer because the almond trees are active much earlier in the season and injury might already be done to the trees before new growth appears upon the vines. You have rather a difficult question to settle in the behavior of the trees, and a good many people have been so discouraged by the difficulty that the trees have been cut out in various parts of the State as not profitable.

### Frost and Dew.

TO THE EDITOR:—Where is frost formed—in the atmosphere near the surface and deposited as frost, or is it frozen as deposited? Is it ever, or can it be, formed after being deposited as dew? Or is dew always turned into ice on freezing? Does dew deposited on a plant aid it in keeping its own heat? Is a plant covered with frost more likely to be injured than one not so covered, the temperature and other conditions being the same?—E. C. COBURN, Loomis.

Frost is formed just at the point where you see it. It is not deposited. The same is true of dew. When the temperature falls to a certain point there is condensation of aqueous vapor on available surfaces; when the temperature falls to the freezing point of water, immediately at those surfaces the condensation takes the form of frost. It is not formed from dew. Frozen dew is ice, just as any other frozen water; frost is frozen vapor.

The presence of dew assists the plant to escape frost injury, just as does the presence of any other water, but this aid is limited to a few degrees of temperature for a short time, or to a less number of degrees for a longer time. The fall in temperature may be so great, or a less fall so long in duration, that the presence of water avails little or nothing, so far as effect on the plant is concerned.

For the same reason a plant covered with frost is less likely to be injured than one not so covered. Frost is greatest as aqueous vapor is greatest. A certain temperature has less effect on the plant when this is the case. Frost injuries are greatest in dry air, but what has been said of the limited protection afforded by the presence of moisture is still true.

### A Shorter Catechism.

TO THE EDITOR:—Is there any known spray, acid or chemical that will effectually kill poison oak? Should it be applied now, while it is dormant, or when it is in full leaf? Can you give a good recipe



for a person afflicted with poison oak that will reduce the swelling in the shortest possible time? Is it injurious to whitewash the trunks of young trees before setting out in the orchard? Does leached wood ashes free the ammonia from hen manure, the same as unleached ashes?—SUBSCRIBER, Sonoma.

We know no way to clear out poison oak but slashing in summer, burning after the first rains and grubbing out the roots. We know no chemical which will kill it without killing the land also for some time. We know that several of the poison oak remedies sold at the drug stores are satisfactory, but we do not know which is best; we only used one at a time and had no chance for comparison; they all gave speedy relief. Whitewashing young trees to escape sunburn is a good practice, but a wash of old air-slaked lime is safer on young bark than freshly slaked stoneline. Leached wood ashes are better as an absorbent for animal manures than fresh ashes.

#### Transplanting Old Trees Not Approved.

TO THE EDITOR:—I have in my orchard some 4½ acres of very old peach trees which should be replaced though they still bear well. Immediately adjoining these is an open space, about ½ acre, just cleared of fig trees. My orchard of 20 acres is in 17-foot squares.

I propose firstly to plant this open space with yearling trees in proper position and then half way between each tree, i. e. 8½ feet, to place similar trees so that on the same ground I have a large number of extra trees. Early next fall, or even that of 1903, the old peach trees adjoining would be grubbed out and the ground plowed and subsoiled; and in the dormant period the extra trees mentioned would be transplanted to permanently take their place. It should be noticed that the distance of removal is only a few yards and the work would be done as careful and speedily as possible. My object is of course to harvest the crop of the old trees while the young ones are coming into bearing.

Stated briefly, my question is: Can a tree of one or two years (counting from first planting out, not from nursery graft) be transplanted a short distance with safety? Of course sufficient extra trees would be provided to allow for failures, and during the whole time they would be carefully irrigated, cultivated and manured.—ALFRED BENHAM, Penryn.

We would not do it. The best tree to plant in the foothills especially is a yearling, and not an overgrown yearling either. Under exceptionally favorable conditions and care your plan might work out right, but the chances are against it. If you should be tempted to leave the trees until 1903 those in permanent place would be dwarfed and the ones to be moved would not be worth moving. Even planting as you propose for one year would be inadvisable for many reasons. Why not plant out the fig clearing now just as you intend it to remain and replant the old orchard later. If the old trees are still bearing well and of good variety head them back well and renew the tops; the peach renews its youth by such treatment.

#### Peaches for Canning and Drying.

TO THE EDITOR:—Will you kindly inform me the best variety of peaches for drying and also the best variety of cling for canning?—H. P. PENNIMAN, Walnut Creek.

The Muir is the most widely grown drying peach; but since clings are coming into such wide favor both for drying and canning, these varieties are gaining on the Muir and other yellow freestones. Perhaps no one yellow cling is more widely popular at present than Seller's Golden, but the Tuskena, Phillips, Runyon's Orange and Levy's Late are all good yellow clings acceptable to canners and covering several weeks in their period of ripening.

#### Black Knot of the Vines.

TO THE EDITOR:—I send you a young rooted vine with a peculiar swelling near the ground. What is it?—GROWER, Santa Clara county.

The disease is what is known as black knot of the vine—probably identical with the crown knot or root knot of fruit trees. The conditions under which it occurs are not fully understood. The proper treatment consists in removing the wart or excrescence and painting the wound with Bordeaux mixture. This prevents its reappearance at the same spot, although other similar knots may appear on adjacent places, and should then be removed in the same way. It is very desirable to keep a lookout at least once a year for the appearance of the knots and to remove them before they reach excessive size. If not removed and properly treated they are likely to enlarge

so greatly as to weaken, and in some cases actually kill the vine to which they are attached.

#### Empty Pecans.

TO THE EDITOR:—I would like to know what is the matter with my pecan trees? I enclose you by mail some specimens. There are three trees along the bank of a small ditch. One has a few nuts of good quality, but the other two trees have only nuts like sample I send. Why is it?—M. L. P., Fowler, Fresno county.

There is no disease in evidence. The nuts are well formed, but have no kernels. The trees are therefore valueless except for shade or ornament. Failure to fill the shells is apparently a weakness of the variety. The failure could hardly be charged to local conditions because one tree behaves in an orderly manner. The only recourse would be to top graft the bad trees with scions from the good one.

### WEATHER AND CROPS.

Annual Review by the California Section of the U. S. Weather Bureau.

ALEXANDER MCADIE, Forecast Official and Section Director.

It may be stated at the beginning that the year was one of large yields and generally favorable climatic conditions. A fair crop was harvested and marketed at satisfactory figures. Farmers made money, both because of the excellent weather conditions and good markets. Shipments of fresh deciduous fruits during the season of 1901 were estimated at 170,000,000 pounds. Some of the details of the growing season follow:

Oranges of excellent quantity were plentiful in January, and the crop had not been seriously injured by frosts. Almonds and peaches were in bloom by the 4th of February, and cherries and apricots were blossoming by the 25th. Several thousand acres of grain were washed out by the heavy rains during February. Deciduous fruit trees were in full bloom by the 4th of March, and work had commenced in the hop fields. Wheat had commenced heading out by March 18.

Frosts early in April caused great damage to deciduous fruits, and severe hail storms injured fruit trees. Haying commenced about the 15th, and cherries and strawberries were shipped from the Sacramento valley. Olive picking was in progress in the vicinity of San Diego by the 22d of April, and vineyards were in excellent condition. Severe frosts on the 26th and 27th in the coast and bay sections injured nearly all varieties of deciduous fruits and grapes.

Grain harvest commenced in portions of the San Joaquin valley about the 15th of May. Peaches, cherries and apricots were being shipped before the close of May from Yolo and Solano counties. Conditions thus far had been favorable for citrus fruits and walnuts.

High temperatures prevailed early in June, greatly to the benefit of grain and hay. Heavy frosts about June 12th damaged corn, potatoes and garden vegetables in portions of the northern counties, but did not injure fruits. Rapid progress was made toward the close of the month in harvesting grain and hay. Prospects were good for the largest crop of sugar beets ever gathered in southern California. The vineyardists in portions of the Santa Clara valley reported the loss of many of the older grape vines, and the three preceding dry years were given as the cause. Abnormally high temperatures prevailed throughout the State at the close of June, but caused no material damage to crops. Fires in the San Joaquin valley destroyed many large fields of grain and much pasture.

During the month of July conditions were very favorable for maturing the grain and deciduous fruit crops and for the growth of sugar beets, hops, corn, beans and vegetables. Harvesting and threshing progressed rapidly, and large crops of grain and hay were gathered, both of excellent quality. The yield of apricots and prunes was generally below average and other deciduous fruits were not proving as good crops as had been expected. Apples were looking well and gave promise of a heavy crop. Grape picking had commenced in some sections before the end of July and the vineyards were in good condition.

Extreme heat during the early part of August seriously injured Tokay grapes, but improved the condition of other fruits and benefited the fruit drying interests. The heavy crops of grain, hay and fruit in the central and northern sections were greatly endangered by the lack of shipping facilities caused by the San Francisco labor troubles, and in some places the loss on perishable fruit was quite serious. Very light crops of wheat and barley were harvested in southern California. Cooler weather toward the close of August retarded the ripening of grapes and late deciduous fruits. Hops, beans and sugar beets were being harvested and all were yielding excellent crops.

Nearly normal weather conditions prevailed during the month of September. In a few exposed places light frosts injured potatoes, beans and vegetables to some extent during the first week of the month, and heavy rains toward the close caused some damage to grain in sacks, unbaled hay, beans and hops. There was an unusually heavy fall of snow in the mountain districts on the 23rd and 24th. Raisin drying progressed satisfactorily, and, as ample warnings of rain were given, the damage to the crop was very light. Shipments of grain and hay were greatly retarded by the labor troubles at San Francisco, and immense quantities of grain were stacked up along the railroad tracks. The season practically closed without disastrous nothers, and with the desired early fall rains.

The temperature during October was considerably above normal, and from the 10th to 12th extremely warm weather prevailed in the coast and bay sections.

The rainfall during the month was slightly above normal, and in southern California it was the heaviest for several years during October. Grain, hay, beans and late grapes were considerably damaged by rain, but other crops were benefited and pasturage was greatly improved. Fires caused considerable damage in the timber lands about Pacific Grove and Salinas and destroyed many acres of grazing lands in other places. Apples were yielding a better crop than for several years. Walnut harvest was progressing, with excellent results. Prospects continued good for a large crop of oranges and olives. The raisin crop was nearly all cured and moving to packing houses. An immense crop of celery was being raised along the Santa Ana river in Orange county. The season for grain, beans and sugar beets practically closed in most sections during the latter part of October, and excellent returns were the rule. Plowing, seeding and tree pruning were in progress in many places.

The temperature and rainfall during the month of November were both above normal, and conditions were very favorable for securing the outstanding crops. The rainy season closed before the middle of the month. Through the timely warnings from the section center, the crop was well protected from the frequent rains, and the loss is quite insignificant. The season was a very successful one, the yield being fully up to the average in many places and the quality of the raisins superior. Oranges were being gathered and shipped in considerable quantities; the yield was about average and the quality excellent. Olive picking and picking were in progress. Early wheat was in excellent condition and making rapid growth. The soil was in good condition and farmers were engaged in plowing and seeding. Some sections reported that the grain acreage would probably exceed that of last year. New grass was abundant, and stock were in good condition. Beans were not badly damaged by rain, as had been reported, and the crop turned out very fair.

The first week in December was marked by unusually high temperatures, and followed by cold weather, severe frosts, fogs and rain, continuing until about the 20th. The cooler weather was beneficial in checking too rapid development of fruit buds. Oranges not protected by smudging and fire baskets were considerably damaged by frost, but as ample warning had been given, the loss was comparatively light. Young orange orchards, nursery stock and vegetables were badly damaged. Grain and green feed continue in excellent condition. Dry, northerly winds prevailed towards the close of December, absorbing much of the moisture in the soil and causing farmers great uneasiness, particularly in the southern districts. On the 27th an unusually severe "Santa Ana" or dust storm occurred throughout southern California, accompanied by high winds, causing great damage. Oranges were blown from the trees and many trees were uprooted. This report closes too early for an accurate estimate of the losses sustained.

San Francisco, Dec. 30.

#### Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, December 31, 1901, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week...	Minimum Temperature for the Week...
Eureka.....	.06	16.13	20.68	17.44	58	38
Red Bluff.....	.00	9.66	8.81	10.42	68	36
Sacramento.....	.00	5.98	7.65	7.33	66	36
San Francisco.....	.00	5.80	7.22	10.06	72	44
Fresno.....	.00	2.17	5.43	6.58	62	30
Independence.....	.00	1.34	2.31	1.88	62	28
San Luis Obispo.....	.00	4.56	10.20	6.24	74	38
Los Angeles.....	.00	2.46	6.79	7.19	80	40
San Diego.....	.00	.77	1.73	3.04	76	42
Yuma.....	.00	.22	.02	1.71	74	32

#### A New Year's Greeting From the Friend of the "White Slave."

TO THE EDITOR:—Will you kindly allow me a little space in your next issue of the PACIFIC RURAL PRESS to openly express my gratitude for the assistance rendered to the widow of the "White Slave;" to those of your readers whose generosity helped us to let the poor woman return to her relatives in the East, and not go empty handed, and to you for making this result possible? I am an old subscriber. You can find my name on your books for the year 1874, but I can truthfully state that, during all the years in which the PACIFIC RURAL PRESS was a welcome weekly arrival at my house, this representative agricultural publication has never disappointed me, no matter which of its departments I choose to consult. And while, just lately, you allotted me a corner in its literary department for a charitable purpose, I knew also that I would not appeal in vain. Believe me, I desire to express again my thanks and my best wishes for a continuous life of usefulness for your excellent paper for all time to come.—ELIZA, Aptos, Santa Cruz county.

WROUGHT iron pipe 4 inches diameter on the inside has about 1 square foot of inside surface to each foot of length, and will weigh about 10½ pounds per foot.

It takes 7½ pounds coal, 15 pounds of dry wood or two quarts of fuel oil to evaporate one cubic foot of water.

A 60 H. P. ENGINE will use about seventy gallons of gasoline per ten hours.



## HORTICULTURE.

### Mr. Roeding's Studies in Turkey.

At the Fresno Farmers' Institute last week Mr. George C. Roeding gave an outline of his trip to Smyrna and what he saw there. After describing in a very interesting manner his experiences as a traveler in Turkey, he proceeded with horticultural observations as follows:

**IN SMYRNA.**—It will take too long a time and more space than this paper will permit to go into details regarding my many experiences in connection with the obtaining of the desired information. The ignorance of the people in general on this subject, which has been known and practiced in this Asia Minor country for over one thousand years, is something which surprises and amazes one more than anything else. The public in general and the owners of the fig orchards know that no Smyrna figs can be obtained without the agency of the fig insect; but in what manner this insect benefits the figs, or how it propagates, is a subject to which they have given no thought. After making this long and hurried trip of 9000 miles for the purpose of getting the information above mentioned, I was informed by men who were supposed to know something of this subject that I had arrived too late to observe the methods followed in carrying out this work. You can readily understand how disheartened I felt, so I immediately proceeded to investigate for myself, engaged a cab, and with a guide made a trip throughout the suburbs of Smyrna; and after traveling around for a number of hours found a Capri fig tree growing in a group of Bardajics, near an old Roman aqueduct, the figs on which were in perfect condition, none of the insects having commenced to emerge. On inquiry I learned that the climate of the interior where the figs were grown was practically the same as on the coast, so that I felt highly elated over my find, for I knew if this was the case I had arrived just in time to carry on my investigations.

**THE FIG REGION.**—The fig orchards proper are located in what is known as the Meander valley, starting about 50 miles from Smyrna and extending along the lower foothills of this valley for 125 miles, and from one-half to three-quarters of a mile wide.

The Capri figs are sold in the bazaars of the various towns along the Ottoman Railway as merchandise, the price this year being one piastre per oke. A piastre is about 4½ cents and an oke is 2.83 pounds. In the year 1898, when nearly all the Smyrna fig orchards were almost cut down to the ground in this valley, due to the very severe frosts, and all the winter Capri figs were frozen, it was necessary to import the Capri figs required for the fertilization of the Smyrna figs from the islands about the coast of Smyrna, and they brought the enormous figure of 50 piastres an oke, or about \$1.25 per pound. It will be understood from this how important the subject of caprification is considered to be in order to develop a crop of Smyrna figs. Though the inhabitants are ignorant of the entire subject, still they are fully aware that without this little insect they can expect no figs. Their methods of handling their orchards are, to say the least, very crude. No systematic pruning is practiced, as this takes too much time, and is too much work, and the only pruning which is done is the removal of such branches as may interfere with cultivation. The trees as a rule, particularly the old ones, are in very bad condition, due to the slack methods of handling them, and a tree which has reached forty years is at the end of its productive period.

**OTHER PRODUCTS.**—Although the fig industry is one of the important industries of this valley, the average product in good seasons running from 25,000 to 30,000 tons, it is also very rich in many other products outside of the figs, a number of which are fully as important, if not more so, than the fig business. Among them there might be mentioned cotton, tobacco, opium, licorice and valonia. The climate of this particular valley, as well as other valleys in the immediate vicinity of Smyrna, is practically the same as that of the San Joaquin valley, with the exception that it is not quite so hot in the summer, although it is very often considerably colder in the winter than it is here. The same varieties of trees and shrubs, which thrive and grow to advantage here, are found to be indigenous in Smyrna. The production of raisins is enormous; and, although there are some wine grapes cultivated, the largest acreage is devoted to the growing of the Sultana, their Sultana being identical with our Thompson's Seedless—in fact the latter variety is nothing more nor less than the Sultana of Asia Minor. The combined product of Sultana raisins, all of which are bleached, from the valleys in the immediate vicinity of Smyrna and the islands off the coast amounts to from 40,000 to 50,000 tons annually.

**LICORICE.**—The licorice business is another important industry well worth attention in this State. All the licorice produced in that country, as well as in Syria and southern Russia, is exported to the United States, and the combined product of these countries as I learned amounts to 30,000 tons and

over annually, which sells in the New York market at \$50 per ton. Our river bottom lands, particularly where the soil is loose and alluvial, is adapted to the culture of this root, which grows, after once established, just as easily as alfalfa. The method of handling this crop in Smyrna is simply to take the roots out in the fall and winter seasons, place them in large ricks, where they are allowed to dry out, and remain until the following fall, when they are shipped to the United States, where all the refining of the product is done.

**OAK CUPS.**—Another industry, which is really of greater importance to the United States, is the production of an article of commerce known to the trade as "valonia." This is the product of a variety of oak, known botanically as *Quercus ægilops*, and is found growing in the upper end of the Meander valley and in the higher tablelands 200 to 400 miles from Smyrna. The cups from these oaks are used for tanning purposes. They are of enormous size, running from an inch to two inches in diameter. The trees are found growing wild in the districts named and are usually the property of the peasants, the trees passing from one generation to another, although the owners may not have possession of the land on which they grow. The trees bring all the way from \$2 to \$4 apiece, the product of course being dependent on the size of the tree. The annual product, so a valonia merchant informed me in Smyrna, averages from 40,000 to 60,000 English tons annually, valued at \$50 per ton in the markets of London. A large quantity of this product is exported to Italy and Russia, but the greater part of it is shipped to England. It is due to the superior quality of the tannin in these oak cups that the high grade Russian leather and other fine leathers in Europe are manufactured. I understand that large quantities of this product are shipped to the United States from London in the form of a powder, for which our American tanners pay a very high figure, having for some time realized the value of this article for tanning purposes, but having only recently learned where the article came from and what it was. No industry affords such a grand future for development in my opinion as this particular one, for tanning bark is becoming scarcer and scarcer, as well as more expensive yearly, so the development of this industry is the natural sequence of the furtherance of all industries in modern times where the object in view is not to destroy the article, which produces a product, as it is necessary to do with the trees (which produce our tanning bark now) but to have something which, instead of losing its value through the production of an article of commerce, increases in value with age through the larger production of its valuable product.

**SMYRNA MELONS.**—Smyrna, as you know, is noted for its melons, but I can say to you frankly that the melons are far inferior to our own, for the reason that no care is taken to select the seeds, so that the melons, instead of improving, are degenerating; and to a Californian, who knows what good melons are, the Smyrna product seems very inferior indeed. Peaches, pears, apricots, nectarines—in fact, all the varieties of fruits which are found growing here, including oranges and lemons—are found to thrive luxuriantly in the valleys near Smyrna, and with a better form of government and with a more energetic and diligent people, this country would prove to be an active competitor to California in the production and export of this class of fruit.

**WHERE CALIFORNIA STANDS.**—Young as California is, she undoubtedly leads the world to-day in the fruit business. Not alone Asia Minor, but all the countries bordering on the coast of the Mediterranean, are 100 years behind California in all modern methods of handling the fruit business. The white fly is ruining the olive industry in Asia Minor as well as Italy, and its depredations are gradually extending into France. Pests of all kinds are found on the orange trees, olive and deciduous fruit trees, and no efforts are made to eradicate them. Improvement in any kind of fruit is unknown, and no change is made in methods of culture. The son does as his father did before him and never questions but that his methods were correct.

It is my firm belief that California has a grand future in the fruit business, as well as in the other lines, which I have already mentioned, for with the energy and intelligence which have always accompanied our people in any work of this kind in which they engage, combined with a climate which cannot be equaled in any other part of the world, it is only a question of time when our Eastern brothers must succumb to that inevitable law, "the survival of the fittest," brought about by their lack of energy, intelligence and of progressiveness, which even their cheap labor cannot obviate.

### The Walnut Disease.

By E. G. WARE of Garden Grove, Orange County, at the Farmers' Institute at Rivera.

I refer to the disease that makes the black spots on the nuts. We have found that if diseased nuts were planted in the nursery, they were sure to produce diseased trees.

**IN THE NURSERY.**—Diseased nuts will come up in

about half the time sound ones will. Very soon after the sprout comes up the disease makes its appearance close to the surface of the ground. First, a water blister forms just under the bark, then turns dark, and the tissue of the new growth is destroyed.

If the first shoot that comes up is not a very strong one, it soon dies, in which case the nut sends up two or three new sprouts, one of which usually survives the second attack of the disease.

The disease eats into the pith of the young tree: but, if thrifty, the new wood will grow around the diseased place and leave a hollow spot.

As the tree grows, the disease attacks it in new places on the body and leaves scars which can be easily detected by close examination. The disease attacks the leaves of the tree also.

The disease in the nursery does not seem to stunt the tree. The largest trees in the nursery are often produced from diseased nuts.

**IN GRAFTING OR BUDDING.**—In grafting or budding on a strong diseased seedling, the bud or graft will grow just as well as one on a sound seedling. We have had buds or grafts grow 14 feet in one season, put on diseased trees, but the bud or graft would have the disease also. The tree is in the poorest condition to resist the attack of this bacteria disease when the new growth is soft and feels sticky.

If one cuts into the diseased part with one's budding knife, and uses the knife without cleaning on the new sound wood, it is very liable to start the disease where cut.

**DISEASE CARRIED BY IRRIGATION.**—Contrary to the opinion of many walnut growers that water does not spread and carry the disease, we have come to the conclusion, by investigation and experiment, that irrigation water is one of the sources that has spread the disease.

We use water to irrigate raised by pump from an artesian well. We have a flume that conveys the water to one walnut nursery which passes under some old walnut trees that have the disease. After the flume has been dry for a few days, let the first water that runs through this flume settle around a few nursery trees. The trees so wet, when they take a new growth, will have the disease.

On the other hand, if we let the water run through the flume into the alfalfa first, then irrigate the nursery, we find no bad result. We have done this repeatedly with the same results, until we are firmly convinced that water, when it comes in contact with the disease, spreads it. In order to get further evidence in this matter, I have spent considerable time the past summer looking up walnut orchards that have never been irrigated. I have found with one exception that they have not developed near as much disease as the irrigated orchards had.

I found one orchard of twelve acres, which is situated in the midst of an irrigated district, with irrigated orchards on every side. It is hard to find any disease in the orchard, except a little in the outside rows next to the irrigated orchards. The owner says that it has never been irrigated except by overflow of water from adjoining orchards into the outside rows. There is where we found the disease. I will say the nearby orchards had the disease. All this has convinced us that irrigation water spreads the disease. We would not have it understood by this that we do not advocate irrigating walnut orchards. We do, and think it is necessary to produce a large nut and good yield. The orchards that were not irrigated we found did not produce the owners as large crops as the irrigated ones.

**TREATMENT.**—The next question is how to fight the disease and save our nuts? Prof. Pierce of Santa Ana says spraying with Bordeaux mixture is the only thing found thus far to be beneficial. We expect to try it this winter; put it on with a power sprayer in time and manner Prof. Pierce may advise.

He says in one orchard it saved the loss of half the nuts. They sprayed every other row, and when these nuts were gathered it was found that there were twice as many bad nuts on the unsprayed trees as there were on those that were sprayed.

## FRUIT MARKETING.

### Distribution of California Fruits.

By MR. A. H. NAFTZGER, President of the Southern California Citrus Fruit Exchange at the Fruit Growers' Convention.

Probably in no other class of products from the soil has there been so great increase in volume in recent years as in fruit growing. The shipments from California orchards alone have increased from 16,000 carloads in 1890 to more than 66,000 carloads in 1900, an increase of more than 400% in ten years. The census reports are not yet complete, but the advance bulletins indicate a similar increase in fruit growing in every part of the country. As for instance, Delaware shows a marked increase in everything except peaches, ranging from an increase of 40% on cherry trees up to nearly 1400% in prunes and plums. It is true that the plums and prunes in Delaware are still in limited quantity, although the



increase was more than 7000 bushels. During the same period the increase in pears in that State was more than 130,000 bushels. Look at the comparative figures of the colder State of Connecticut. During the decade the number of bearing apple trees increased nearly 50%; cherry trees, 60%; peach trees, 489%; pear trees, 43%, and plum and prune trees over 1200%. Like Delaware, some of these products are still in limited quantities, although the increase is marked. Fruit growing has been stimulated by the genius of the people in seeking new lines of profitable industry, but more particularly by the consumptive demand for fruit. The luxuries of a few years ago have become the necessities of to-day. With a very large percentage of our population no breakfast, luncheon nor dinner table is complete without fruits in some form. There was a time when the delicious products of tree and vine were sought for by the rich to the remotest corner of the earth, even at great cost, but with the vast increase in production, these fruits must seek new markets, and not wait to be sought for.

**WHO WILL EAT ALL THE FRUIT?**—Notwithstanding the superiority of California fruits over most others on the globe, the vast increase in the industry in every direction causes the California grower to stop and inquire what of the future. Where is he to find consumers, and how? The distribution of fruits is but another term for marketing, and I take it the committee so regarded it in assigning me to the subject. Thousands of growers in California have found that they can overcome all difficulties and grow the finest fruits the world has ever seen, but how to convert them into money at profitable figures is the ever-present problem. From year to year they find that they must have more consumers. These must be created. How to do this fast enough to keep pace with the increasing product is a question that will tax the skill of all the growers. That every pound of fruit grown in California could find a market profitable to the producer if properly brought to the attention of consumers there can be no doubt. I am not prepared to admit that we have reached the limit of profitable production, not to say anything about the so-called overproduction.

**WHAT IS NEEDED?**—What we want is an orderly distribution of our fruit into the markets we have, and the education of consumers to require more of it. As I have said in this convention before, people buy things because they see them, and because they are presented in an attractive form. After having spent a number of days at the recent Pan-American Exposition at Buffalo, I feel safe in saying that no exhibit drew more attention or created greater interest than that of California fruits, both fresh and cured. The beautiful display of dried and canned fruits was an unfailing attraction, and I have no doubt will bring thousands of new customers for these products. It will surely be so if like fruits are offered in the home markets, where the people can see and buy them. Some method must be devised by which these cured fruits, prepared in the very best manner, are put on exhibition, and sold in every city and village over the country. Thousands of people who seldom if ever buy California raisins, prunes and other cured or fresh fruits would become regular buyers and consumers of them if they were brought to their attention in attractive form, and at prices which would net the producers handsome profits. Furthermore, the people must be educated by making them acquainted with the delicious and health-giving qualities of these fruits. They must be brought to the notice of the housewife, the steward or the cook, as the case may be, day after day. As to cured fruits, I should say the plan of putting them up in small, attractive packages, ready for market, a most excellent one, provided the necessary machinery for distribution of them is put in motion. And every one of these small packages should be accompanied by some formulas for preparing for the table, or some short, crisp statements regarding the character of the fruit, its good qualities, etc. It may be necessary even to systematically carry these packages and sell them at the doorstep.

**CREATING A DEMAND.**—It is perfectly evident that we cannot depend upon a spontaneous demand; we must create one. Neither can we depend upon the usual channels of trade for the proper exploitation of the markets. Nobody except the man whose sweat and toil produced the fruit has enough vital interest in the product to push it constantly into consumption, unless he is paid for doing it. People in trade will devote their energies to the article that is easiest to sell, and the moment demand for any particular article weakens, they turn their attention to something else out of which a more ready profit can be obtained. There will follow a period in which the particular article neglected is not consumed in necessary quantities. We cannot wait for people to buy our fruits as they buy flour and meat and shoes—simply of necessity. We must educate them to require our products all the time, because they have a taste for them.

But, you ask, how can all this be done? It involves vast detail and the expenditure of considerable money. It will surely be done, if it can be made to appear that it will pay, but the individual growers cannot do it. He cannot afford to employ agencies to carry his product and put it before the people in

the way suggested. Paradoxical as it may seem, I will therefore say that the best way to distribute our fruits is to get them together. First, the interests of many growers must be consolidated. If you have grown weary of the word co-operation, let us call it by the more modern term of "community of interest."

**COMMUNITY INTERESTS.**—It is true that the individual grower who packs his own product for market could place in every package some suitable advertising matter that would interest the consumer into whose hands it might fall, and probably have the effect of causing him to buy more of the same fruit. But even this form of advertising and educating the buyers can be carried on more systematically and successfully by the co-operation of the many. I have no doubt that the many thousand small packages of seeded raisins given away by the people of Fresno to visitors at the Pan-American Exposition will have the effect of making thousands of new customers for their seeded raisins. I do not pretend to be familiar with the methods adopted for doing this work of distribution, but it probably fell so lightly upon the many parties at interest that no one felt the expense.

**THINGS TO DO.**—Last year the Southern California Fruit Exchange had printed half a million circulars setting forth the good qualities of the California lemon, both for table and toilet; also many formulas for the use of the lemon. These circulars were distributed by putting them into the boxes as they were packed for shipment. The cost of this to any one grower among the hundreds who bore the expense was so slight that it was a burden to no one. These are but suggestions of the ways that could be employed for disseminating information and creating interest in the superior qualities of our fruits. Having aroused an interest, we must follow with supplies, prime in quality and abundant in quantity, not offering spasmodically, not waiting for the consumers to call on the retailers and they in turn go to their jobbers and demand these fruits; but we must see to it that they are always in their proper season in the hands of the jobbers, and if they are dilatory about it we must go past them to the retailers. If, however, there is a demand upon the part of consumers, jobbers will be very willing to handle them. It is difficult, if not impossible, to estimate the great damage and loss that will ensue if the interest in any of these fruits is permitted to lag during their proper season. People will not eat twice as many prunes in January because they did not eat any in December. In fact, if they are permitted to neglect prunes in December, and become accustomed to some substitute, it may take half or all of January to get them back to prunes. The work of advertising which I have suggested in the way of circulars, formulas, etc., must be supplemented by personal effort. I do not ignore, nor do I underestimate, the value of ordinary channels of commerce through which any commodity is placed upon the market, but I am thoroughly convinced that these usual channels are not sufficient for our uses. As I have already stated, brokers, jobbers, retailers and speculators, like the forces of nature, work along the lines of least resistance. In other words, they devote their attention to the thing easiest of accomplishment. Having no particular interest nor investment in the production of fruit, they will deal with it precisely as with any other commodity. They will sell it when there is a demand for it, and neglect it when the demand weakens. As a consequence, any one or more of our fruits may any time disappear from the markets for an indefinite period. Something else, or even nothing, may be substituted for it. This leads me to say that, in my judgment, if fruit growing in California is to be permanently successful, we must sell our products through agencies of our own. As President Bond of the Cured Fruit Association said in his annual report: "I would have the association sell its fruit through its own agencies." So thorough is my own belief, gained by observation and experience, that this is of prime importance that I place it ahead of all other factors in the problem of distribution. If we want work done we must go or send. Every other great business undertaking is exploited by personal and executive representatives. Where is there another industry of so vast extent as fruit growing in California that attempts to put its products on the market through agencies established for other purposes, or with mixed interests? It has been stated upon the floor of this convention that the fruit products of California have reached the enormous valuation of \$25,000,000 in a single year. Will any grower attempt to maintain that this is not sufficient to justify the maintenance of the most thorough system of distribution?

**OUR OWN AGENTS.**—A very small percentage of this great sum would girdle the earth with the best talent obtainable, devoted solely to the introduction of California fruits. This will separate the work of marketing from adverse influences; it will eliminate speculative figures; it will establish permanent channels through which supplies reach the consumer; it will equalize distribution; it will reduce operating expenses; it will strengthen and steady prices. I have yet to hear what I deem a sound argument against this method. If you will excuse what may seem somewhat personal, I will say that the Southern

California Fruit Exchange has its own office in thirty of the principal cities of the United States. Salaried agents and assistants in these offices are constantly keeping our fruits before the attention of the jobbers in all of these cities, and adjacent territory. In fact, by this method we cover every jobbing city in the United States and extend into Canada and Europe. Through these agencies we are marketing half the citrus products of California satisfactorily to the growers, and to a large degree steadying the markets for the other half. These agencies are engaged exclusively and continuously in the sale of California fruits. They are not talking oranges to-day, bananas to-morrow, baking powder the next day, and so on; but are incessantly urging our fruits upon the attention of the jobber and the wholesaler, and, if he should show indifference to them, they go to the smaller and country merchants with them.

**RESULTS.**—During the year since the last meeting of this convention, we have sold through these agencies over 11,000 carloads of citrus fruits for nearly \$9,000,000. In addition, we have sold for other co-operative organizations, some hundreds of carloads of California products. This we have done at a cost of but 3 cents to the grower. We transacted this large business without the loss of a dollar from bad credits. Covering a period of five years, and the sales of \$22,000,000 of fruit, our total losses from bad credits have been one-fortieth of 1%. These facts and figures are cited to show you the method I advocate is practicable, and can be carried into successful execution. It is not a dream.

Pardon me for repeating what I have said frequently before in these conventions; that California fruit growers ought, and I believe must, establish control and maintain their own agencies for the distribution of their products, kept free from the shifting influences of speculation. This must have for its sole purpose and object the interest and success of the individual grower. These agencies, dominated alone by and for the fruit growers, must be the ever open doors through which the products of our orchards shall be borne in steady but well regulated stream into every market of the world. All of this can be done by a combination of all, with small cost to all. It cannot be successfully accomplished without combination.

## THE APIARY.

### Abnormal Swarming.

Our beekeepers may be interested in parts of a paper on the above theme by Mrs. A. J. Barber of Mancos at a recent assembling of Colorado beekeepers. Somewhat similar conditions prevail in this State and the methods mentioned may be suggestive.

**AN EARLY IMPRESSION.**—Until last year I should very confidently have said that there would be no excessive swarming if bees were properly managed, and that swarming could be controlled by a proper use of half-depth Hoffman frames used with sections, letting the bees fill and keep them over winter. Just before alfalfa bloom, or when the bees begin to get crowded, we raised the small super and put sections between it and the brood chamber, being careful to have the queen below. The bees usually go to work at once in the sections and continue to work as long as the honey flow continues. We seldom have more swarms than we want, and get good honey crops, while our neighbors have trouble in getting the bees started in sections and have excessive swarming as hot weather comes on.

**NEWER EXPERIENCE.**—Last year, however, was an exceptionally hot and dry season, and the honey flow was scant and slow. The bees simply went crazy, and when I raised the extracting supers and put in sections they just made queen-cells on the brood in the upper story, and left without beginning on the sections at all. We began as usual, having swarms on starters in a new hive on the old stand, but usually the swarms would come out again the next day. Sometimes they would loaf in the hives two or three days, gnawing off the starters, but doing nothing else. Sometimes a little comb would be built, a few eggs deposited and queen-cells started, and the swarm would come out again.

**OLD COMBS NOT GOOD.**—We tried hiving on old combs and on full sheets of foundation, but got no better results than with starters. I exhausted my ingenuity, patience and resources in trying to satisfy them. Near the end of the season I began killing every queen that came out the second time, and giving her bees either a newly hatched queen or a frame of brood with a good queen-cell the next day after the old queen was destroyed. This, I think, is the best plan, except for one disadvantage. I have found that in excessive swarming there is always a great deal of excitement among the bees and that more than half of the young queens are lost before they begin to lay.

**CAGING THE QUEEN.**—The next plan was to cage the old queen when she came out with the swarm and keep her caged for a few days. Usually the bees will go to work when she is liberated, at least mine did; but to this day I can't say positively that caging the



queen made them go to work. They may have been just ready to get over their swarming fit, and might have gone to work soon any way. I did not try that until late in the season, but if I ever have another experience like last year's I shall depend upon having swarms on starters on the old stand with a caged queen. In a small apiary I should kill old queens and give cells or newly hatched queens, but in a large apiary the loss is too great, as not more than one in three of the young ones will get to laying.

We have all our bees in shade now, and believe that we shall have less trouble. My home apiary is in a nice grove, and last year when nearly all the other bees were crazy we had but little more than the usual swarming there. The apiary at the Kramer place was in sunshine most of the day, and we had only three colonies that did not swarm at all at that place, and all the rest of them swarmed from once to half a dozen times each. This year we have not had as many swarms as we wanted, but about the same amount of honey—a short crop in both cases.

Honey Conditions in the San Joaquin.

A correspondent of *Gleanings in Bee Culture*, well known as "Rambler," gives an account of peculiar conditions in central California. He writes: It does not take a great amount of observation in central California to learn soon that the conditions for honey production are entirely different from what they are in the older and more familiar fields in the United States; and, furthermore, the conditions are very perplexing. In New York, where I first learned to sling honey, and, in fact, in all portions of the East, if honey comes at all we know within a few days when the flow will be at its best, and we can prepare our colonies accordingly; or, in other words, the wide-awake beekeeper will have his dish right side up and will catch the liquid. It is the same in the sage districts of southern California. But in the great San Joaquin valley the beeman does not know where he is at half of the time.

**BLOOM AND SWARM.**—The bees start in very nicely in February upon the almond bloom, and then through March and into April there is a succession of fruit bloom; and just as the colonies begin to get ready to swarm, and do swarm sometimes, there comes a dearth of honey; and all through May, and often through June, the bees use up what little surplus honey they have gathered, and, unless fed, they starve.

It is during this starvation period that the bees are brought up with a round turn in their swarming plans; and, no matter how much honey they may get afterward, the fever does not return.

My experience in this location covers two years; and during this time all of the breeding from fruit bloom has been a useless tax upon the queen, and a great majority of the bees have been bred to no purpose. If the starving period continues until into July, strong colonies become mere handfals; or, as Mr. Aiken termed it some time ago, the colony "evaporates," even with honey in the hive.

**THE ALFALFA SEASON.**—I am told that the bees do commence work sometimes in June upon alfalfa; but during the two years of my experience, this commencing to work has been between July 1st and not until late in the season. If the yield commences early in June, some of that big force bred in March and April holds out to gather some honey and to hold up the breeding of bees, and a good honey crop is secured. The same may be said with some modifications if the yield does not commence until July. During the past season the honey yield was deferred until well up to September, and the alfalfa cut but a small figure in the yield.

In central California we have an abundance of water for irrigation. It is used lavishly upon the alfalfa fields, and the growth of the foliage is rapid and rank. In the height of the season I planted a stake in the field, and every 24 hours measured a particular stalk, and for several days the average growth was 1½ inches per day. All through April and May the alfalfa comes to maturity, and is mown; but the blossoms are of no use to the bees, for they are blasted. The rank growth of alfalfa all around my cabin showed the fuzzy white tips of blasted blossoms. This condition continued all through the period of irrigation; and, as a consequence, alfalfa yielded but little honey. When I observe such effects I naturally try to find the cause; and I had a suspicion that it was from too much flooding with water. In comparing notes with my neighbor he entertained the same idea. He has kept bees in this valley for several years, and his explanation of the cause of blasted blossoms is very reasonable. He says that, when there is a little rainfall through the winter, little snow on the mountains, there is less water for irrigation, and it is taken from the ditches in June. Then the non-irrigated fields of alfalfa will bloom and yield honey. But if there is a heavy rainfall and all of the mountain reservoirs are filled and the water is not taken off until August, there will be but little alfalfa bloom and honey, and that has been the condition during the past season. To verify this opinion, there was a patch around my cabin that did not get its drenching with water and that particular spot was well covered with blossoms.

The past season has been one of extreme uncer-

tainty. Up to September 1st but little honey had been extracted; but late fall flowers came on in abundance; our hopes were revived; the extractor was operated clear up to October 30th; and in my case, where I expected barely three tons, nearly a carload was secured.

The great problem in this valley is to learn how to hold the bees in when they want to increase, and make them increase when they don't want to. I think the problem is not very hard to solve; but as my plan is as yet theoretical I will not now present it.

AGRICULTURAL ENGINEER.

Mountain Roads.

NUMBER IV.

JAMES W. ABBOTT in Year Book U. S. Dept. of Agriculture for 1901.

Double tracks for turnouts should never be less than 75 feet long. These should be visible from each other and from every foot of the intervening distance. Before laying out a road, the maximum distance between turnouts should be determined from all the conditions, especial consideration being given to the amount of travel likely to occur at night, and this maximum should never be exceeded. Where the conditions make it imperative to establish this maximum at over 100 feet for turnouts adapted to heavy traffic, it is well to widen the road for short distances at intervening intervals for light vehicles. A width of 12 feet will allow light vehicles to pass each other in emergency. Where the utmost economy must be observed, this extra width for a short turnout can be secured by cutting into the bank previously constructed with proper batter. Of course, it makes the inside bank too steep at these places, but it is a choice of evils in the interest of greater convenience and safety to light traffic.

It is obvious that in sidehill grades excavated in picking or plowing ground that portion of the road that is formed from the original material in place must for a time be more solid than the portion built out. It is, consequently, desirable on roads designed for very heavy traffic that all the wheels of heavily loaded wagons should rest upon the original solid formation. Standard vehicles are either 4 feet 6 inches or 5 feet between the centers of the tires. A very heavily loaded wagon can not be restricted to the same width of roadbed as light vehicles, but should be allowed a latitude of 8 feet for varying conditions of draft, road surface, etc.

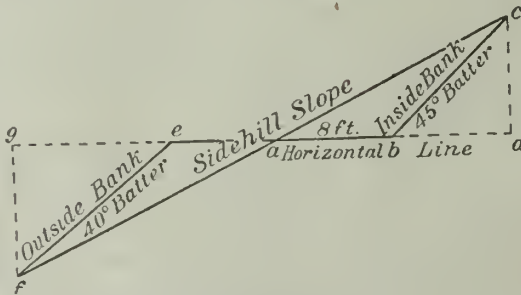
A hillside composed of picking or plowing ground is rarely ever steeper than 35°. A hillside grade formed by cutting 8 feet into such material makes an excellent roadbed. The inside 8 feet of it is solid from the first and adapted to the heaviest traffic, and the balance, made by the fill, is sufficiently wide to allow lighter wagons to pass. The following table shows the total width of such a roadbed for various sidehill slopes and the amount of material which must be excavated for each 100 feet of roadbed:

Sidehill slope.	Width made by fill.	Total width.	Excavation per 100 feet.
DEGREES.	FEET.	FEET.	CUBIC YDS.
5	7.89	15.89	11.26
10	7.83	15.83	25.33
15	7.72	15.72	43.41
20	7.52	15.52	76.41
25	7.29	15.29	103.31
30	6.87	14.87	161.78
35	5.94	13.94	276.59

The following diagram and mathematical discussion are given to show the method by which the results presented in the table were obtained.

In the following the inside bank is calculated with a batter of 45° (one to one) and the outside one with a batter of 40°. The results of any other depth of cut may be quickly obtained from the table by simple proportion. For instance, for a cut of 7 feet into the bank the total width of roadbed would be seven-eighths of the figures in the table; for a cut of 9 feet the total width would be nine-eighths; for a cut of 10 feet, ten-eighths, etc.

Applying to this a 25° slope, we find that a 10-foot cut into the bank gives a total width of 19.11; a cut of 9 feet gives 17.20; one of 7 feet, 13.38; one of 6 feet, 11.47, and one of 4 feet, 7.64.



A=cad=sidehill slope.  
x=bd=cd=vertical depth of cut.  
1 : tan A :: 8+x : x.      x =  $\frac{8 \tan A}{1 - \tan A}$   
z=ea=width of road made by fill.

z+8 ft.=total width of road.  
y+gf=vertical depth of fill.  
yz=8x.      z= $\frac{8x}{y}$   
z=y [tan (90°-A)-tan 50°].  
8x=y²[tan (90°-A)-tan 50°].  
y= $\sqrt{\frac{8x}{\tan (90°-A)-\tan 50°}}$   
z=[tan (90°-A)-tan 50°]  $\sqrt{\frac{8x}{\tan (90°-A)-\tan 50°}}$   
z= $\sqrt{8x [\tan (90°-A)-\tan 50°]}$

Amounts of material which must be excavated increase or decrease as the squares of the depth. To illustrate: For a cut of 7 feet the amount of excavation would be  $\frac{49}{64}$  of the amount given in the table; for a cut of 6 feet,  $\frac{36}{64}$ ; for a cut of 5 feet,  $\frac{25}{64}$ , and for a cut of 4 feet,  $\frac{16}{64}$ . The following tables show the total widths of roadbed and amounts of excavation for a cut of 6 feet and for a cut of 5 feet:

6-FOOT CUT INTO PLOWING OR PICKING GROUND.				5-FOOT CUT INTO PLOWING OR PICKING GROUND.			
Sidehill slope.	Total width.	Excavation per 100 feet.		Sidehill slope.	Total width.	Excavation per 100 feet.	
DEGR'S.	FEET.	CU. YDS.		DEGR'S.	FEET.	CU. YDS.	
5	11.92	6.33		5	9.93	4.40	
10	11.87	14.25		10	9.89	9.97	
15	11.79	24.41		15	9.83	16.96	
20	11.64	37.89		20	9.70	26.33	
25	11.47	53.15		25	9.56	40.41	
30	11.15	91		30	9.30	63.19	
35	10.45	155.59		35	8.71	108.06	

In the above tables no account is taken of either increase or shrinkage in bulk of such material. On shallow fills of this nature the first effect would be a slight increase in bulk, which would tend to make the road a trifle wider, but the ultimate result would be practically what the figures in the tables indicate. That tendency always acting for the outside of the road to become lower and the inside higher must be overcome by repairs. We see from the tables that while we should cut 8 feet into the bank for a double-track road a cut of 5 feet will give a practical single-track road with only  $\frac{25}{64}$  as much excavation, or that the double-track road requires more than two and one-half times as much excavation as a single track.

In sidehill grades in rock the conditions are very different. Rock excavations are made by blasting, which throws a large proportion of the rock down the hill, and consequently the material thus broken out can not be depended on with any certainty for fill. That which does remain available increases in bulk about 50%.

On rock slopes up to 20°, unless very smooth and slippery, a fill will stand, the natural friction of the surface being sufficient to hold it firmly. Above 20° this can not be relied upon, and any rock fills made on such slopes must be very carefully secured at the bottom to prevent sliding.

As stated above, while a bank made of broken rock will often stand with a steeper batter, it is not safe to figure on more than 40°.

When the natural surface of the rock is too steep to hold a fill it is often the better practice to cut the entire roadbed out of the solid rock. A roadbed on a solid rock shelf is absolutely secure and in no danger of giving way without warning, because cribbing becomes rotten or retaining walls fail. Such a roadbed for single track should be 10 feet wide, carefully protected on the outside by a guard log not less than a foot in diameter at the small end, firmly bolted to the rock. The amount of excavation in solid rock on different hillside slopes to obtain such a roadbed is shown in the following table, accompanied by diagram and mathematical discussion illustrating how the results were obtained.

The table below can be used for deeper cuts by remembering that the amount of material varies as the square of the depth of the cut. For instance, an 11-foot cut will require  $\frac{121}{100}$  the excavation shown in the table; a 12-foot cut,  $\frac{144}{100}$ , etc.

Sidehill Slope			Batter 1-4		
10 ft.			10 ft.		
Sidehill slope.	Excavation per 100 feet.		Sidehill slope.	Excavation per 100 feet.	
DEGREES.	CU. YDS.		DEGREES.	CU. YDS.	
5	16.30		25	97.78	
10	34.07		30	125.19	
15	53.33		35	157.04	
20	74.07		40	196.30	

A=bad=sidehill slope.  
x=cd=horizontal depth of cut.  
4x=bd=vertical depth of cut.  
1 : tan A :: 10+x : 4x.  
4x=x tan A+10 tan A.  
10 tan A.  
x= $\frac{10 \tan A}{4 - \tan A}$

(TO BE CONTINUED.)



## Agricultural Review.

### BUTTE.

**MORE FINE BEEF CATTLE.**—Chico Enterprise: The Red Bluff Sentinel calls attention to a sale of beef cattle by Alonzo Swain of that place in which he disposed of seventeen steers at 8½ cents per pound. Supt. Ramsay of the Stanford ranch at Vina can go Mr. Swain "one better," as he sold forty-three head of steers to a San Francisco firm for 9 cents per pound. The heaves averaged 650 pounds net. Since taking charge of the Vina ranch, Mr. Ramsay has been improving the grade of cattle raised there, and the high price he received for this fine bunch of beefs shows that his efforts have not been in vain.

### FRESNO.

**NEW IRRIGATION PLANTS.**—Tulare Register: A new plant for irrigation is under way at the Pulvidero, about 10 miles southwest of Huron. This will be a pumping plant to cost \$5000 or thereabouts. Oil will be used for the plant. Water is only from 14 to 30 feet, and after this plant is in good running shape and the West Siders see what can be done there will be plants put all over the West Side. With oil at 40 to 75 cents a barrel no cheaper fuel can be found.

### HUMBOLDT.

**CREAMERY PRICES.**—Arcata Union: Creameries in this section paid on Dec. 15th as follows: Arcata, Laurel Dell, Cauza Bros., and Minor's all 25½, Premium 26½. Creameries in Eel River valley paid as follows: Ahrahamsen 26, Capitol 25, Cold Spring 16 days 27, 14 days 25; Cream Valley, 25½; Crown, 26½; Eel river, 25½. Excelsior, 16 days 28, 14 days 25½; Ferndale, 26½; Grizzly Bluff, 26; Pioneer, 25; Riverside, 26; Silver Star, 26; Sunset, 25½.

### KINGS.

**SOME PUMPKINS.**—Hanford Journal: The Fresno papers are announcing that Fresno county has just produced a pumpkin that weighs 161 pounds and it has been presented to the Chamber of Commerce to be exhibited. Down here in Kings county we sell such pumpkins for cow feed at \$1.25 a load and think nothing about it. It is no uncommon sight to see a man and two large boys on a wagon going out to load pumpkins. On exhibition at King & Thomas', in Hanford, can be seen a pumpkin that weighs 238 pounds.

### ORANGE.

**WALNUT TREES CHOPPED DOWN.**—Anaheim Gazette: A Fullerton walnut grower has just completed the work of digging up eighteen fourteen-year-old walnut trees of the French soft shell variety, owing to their light bearing. Last year he took out thirty-two, and the year before eight, making fifty-eight fine large trees sacrificed. Their places will be taken by English soft shells. The French variety will not acclimatize itself here.

**BUYING MANURE FOR CORONA.**—Santa Ana Blade: Geo. E. Jones, of the firm of Schliesman & Jones of Corona, is in town buying manure for use at that place. He has purchased 300 tons on the San Joaquin ranch and hopes to get more before leaving. It is worthy of at least passing notice that the best manure for fertilizing purposes is very scarce all over this county now because of the many buyers from outside points, who have bought up all that the owners were willing to sell.

**MOIST LAND TILING.**—W. T. Lawrence, a practical tile maker and an expert in the work of laying down tile, has taken a contract to lay drain tile through a considerable acreage south of Westminster, and will begin work next week. The tiles are from the factory of J. B. Raine & Son, and are made almost immediately on the ground where needed; and as there is a plentiful supply of tile on hand and ample facilities for manufacturing more, the start in tile draining just being made may be but the beginning of a big job in that line.

**CAPISTRANO WALNUTS.**—C. C. Butterfield of Capistrano, speaking of the season's yield of walnuts in that locality, says that the returns both in price and quality have been very satisfactory. Mr. Butterfield has thirty acres of young trees from which he sold the crop for \$4400, and other growers did equally well. He also says that the disease complained of elsewhere was not in evidence at Capistrano, as out of his whole crop he had less than 100 pounds of diseased nuts.

**DAMAGE TO CELERY CROP.**—Santa Ana Blade, Dec. 20: As to the frost the celery growers are much more frightened than hurt, for only in certain sections has the frost done damage, but in these localities it has worked considerable injury. Where the most damage has been done is in the old peat land, and while the extent of the loss cannot yet be definitely esti-

mated, it is a pretty certain thing that much of the White Plume is frozen so as to unfit it for shipment, and some of the Yellow Self-blanching is also damaged. In the newer celery country, or sediment land, the damage is trifling so far as can at present be ascertained, although much depends on the weather for the next month. The total loss so far will probably not exceed 15% of what would have been marketable celery had the frost not come. The Blade's estimate, made before the frost, was for an output of 1200 cars, with a possible deduction of 100 cars by reason of frost or flood. Buyers place the quantity of celery still in the field at from 250 to 300 cars of white celery and possibly 450 cars of yellow.

### NEVADA.

**FINE ORANGES.**—Grass Valley Tidings: N. C. Segestrang, who owns the Pet Hill toll house, and also the goodly acres surrounding that hostelry, exhibits a limh taken from one of his orange trees, the limh containing fifteen luscious oranges. This fruit was grown on the ranch of Mr. Segestrang, 11 miles below this city. He has quite a number of orange trees and has sold a number of cases this year to merchants in different towns throughout this section. The yield is exceptionally large and the oranges on the trees are so numerous that they almost hide the leaves from view. Mr. Segestrang informs us that the oranges on his place ripen at at least two weeks earlier than they do farther south.

### SACRAMENTO.

**HORSES FOR ENGLAND.**—Record-Union: There is likely to be considerable doing in the line of horseflesh at the Haggin stables on the Grant for the next few days, and many large sales may be made. Recently J. S. Colton Fox, the Duke of Newcastle, registered at the Capital Hotel and later went out with Mr. Bowers to see Mr. Mackey at Ben Ali, with a view of purchasing some stallions for export to England. W. G. Lang, the well-known San Francisco horseman, went out to the Haggin stables with a Japanese of high rank, who is here purchasing horses to ship to Japan, and who intends to take back sixty thoroughbreds if he can find them to suit him.

### SAN BERNARDINO.

**A HORSE WELL UP IN YEARS.**—Chino Valley Champion: Henry Cline had a horse die on Tuesday that was the last of a team with a history. Ten years ago, when Mr. Cline's father died, he gave Henry this team, which was one of the best in the country, and requested that they be kept on the place on a pension. Henry did so, keeping them in pasture without work. One of them died two years ago, and the other on Tuesday of this week, at the age of 26 years, 2 months and 29 days.

**FROST DAMAGE LIGHT.**—San Bernardino Times-Index: A correspondent of the Times-Index took a trip around the valley Sunday to see for himself what damage from frost he could see or learn of. In the low lands of West Highlands the young sprouts and young trees had been nipped a little, but not enough to do much damage, while the older trees did not show any damage, with the exception of the high branches, which had been nipped a little in a few localities. At Highland, Mentone and Redlands the damage was hardly enough to notice, as, with the exception of the young trees, nothing seemed to have been touched. Several ranchers who were spoken to said the damage was hardly enough to notice.

### SAN JOAQUIN.

**BLACK LAND CROPS.**—Stockton Independent: Long ago the Italian gardeners, who know the great value of rich lands, picked out garden tracts on the adobe section of San Joaquin county, and they are making all kinds of money by their industry and practical working of heavy lands, but they do not make public their results. Other proofs are at hand to show the great value of the adobe lands. Here is one that is a stunner: Steward Chesnutwood at the State Hospital keeps track of all the produce raised on the State's property. His statement of the products of two small tracts in the State grounds is as follows: On a tract of 1½ acres, well cultivated and thoroughly irrigated, the hospital gardeners this year raised twenty-eight tons of pumpkins, worth in the market \$10 per ton, making the total product \$280. On a tract of 1½ acres of the same black land the gardeners produced 505 dozen excellent muskmelons, worth 75c per dozen, making the total yield of melons worth \$378.75.

**DOCK-TAILED HORSES PULL A CHINAMAN'S PLOW.**—Stockton Record: Even a horse does not know what he will come to by the fitful flights of fortune. Recently there was an auction on the Barnhart ranch, and Jim, the Celestial Potato King, went over to make a few buys. He

bought to the extent of \$1100 worth and paid for it by check. Among the property which became his was a spirited carriage team of dock-tailed horses. He had a dash of sporting blood in his veins and liked the looks of the equines. He wanted to drive over his broad acres in style and give orders to his army of coolie laborers as became a man of means. A few drives with the high spirited animals convinced him that it would be hard to issue his directions while hitting only the high places along the levee. The team humped him over the ground at a rate that was altogether too fast and called for too much muscle behind the reins. So he hitched them to a plow, the highest one on the place, and now passers-by may behold a pair of high bred, dock-tailed horses puffing and straining at the head of a plow. These horses did not know when they were well off. Not only do they have to work during the day, but must be stabled and fed with the common stock. It is not every farmer who is plowing with a \$250 team. "Jim, the Potato King," is now making money "hand over fist." Everything comes his way. He farms several hundred acres and the acres are full of spuds and he knows where to sell them. He has a hundred Chinese working for him, and even at this late date is still digging potatoes by the wagon-load from his prolific island domain. He rents the land, but could buy it easily if he wished.

**LARGE PUMPKINS.**—Lodi Sentinel: W. E. Whipple of Clements had on nine acres of upland on the Gillis ranch forty-five 4-horse loads, the pumpkins weighing from 75 to 112 pounds. Several were 38 inches long and weighed from 102 to 112 pounds.

**HIGH-PRICED CATTLE.**—Two carloads, or thirty-three fine imported Shorthorn cattle, costing \$30,000, arrived this week from Chicago for the Staten Island Stock Farm. John Sullivan of Staten cared for the stock while en route here, they being on the road five days. They arrived in fine condition, looking none the worse for their long journey.

### SANTA BARBARA.

**PRICE OF OLIVES HAS DROPPED.**—Santa Barbara Independent: California olive growers are harvesting their crop. In every orchard in the State the trees are loaded with the fruit, and the acreage devoted to the cultivation of olives is much larger this year than ever before. In recent years the yearly crop of olives seldom ran over 2000 barrels, or, taking seven barrels to the ton, about 286 tons. The growers who sell their olives as they come from the trees have formerly received \$60 per ton for their product, or 3 cents a pound. It costs 1 cent a pound to pick the fruit, thus allowing the growers \$40 a ton for their olives. This year the total crop of the State will reach 800 tons, or 5600 barrels, an increase of 3600 barrels over last year. The price this year has dropped 33½%. Olives now bring only \$40 a ton as they come from the tree, half of which goes to the pickers, thus allowing the growers only \$20 a ton.

### SANTA CRUZ.

**CLOSE OF SUGAR BEET CAMPAIGN.**—Watsonville Pajaronian, Dec. 26: It was estimated that there were, on Monday, about 22,000 tons of beets undelivered of the crop of 1901, and that with fair weather the crop will be in a week hence. Of the undelivered beets 10,000 tons were in Pajaro valley, 8000 tons in Salinas valley and 4000 tons in the San Juan valley. Last Friday 1680 tons of beets were shipped to Spreckels from Pajaro valley, the heaviest delivery of beets ever made from this valley in one day. There have been many days when the delivery closely approached that tonnage. It has been a favorable beet year from seed planting to the close of the harvest.

### SONOMA.

**MODEL POULTRY FARM.**—Albert Strantz & Bro., the Single Comb White Leghorn fanciers, have a model poultry farm of ten acres on Two Rock road about three miles from Petaluma. Their improvements include a commodious house, neat barn and a complete water system and some \$500 worth of wire fencing, and with their large, choice selected and healthy stock of birds represent an investment of about \$6000. They have 1400 young hens and were recently gathering 25 dozen eggs a day, feeding kale cabbage and green barley. Houses 7x10, hold 75 fowls and double yards are used to give continuous green feed. Four incubators with a capacity of 1750 eggs are set in December and January. They started four years ago with four dozen fowls, the land costing \$1000.

### SUTTER.

**HOP CROP SOLD.**—Wheatland Four Corners: The entire hop crop of the Rideout yard in Sutter county, consisting of 654 hales, was sold last week to W.

Uhlman & Co. of San Francisco. The figures were 8½c per pound.

**FROST INJURES OLIVES.**—Sutter Independent: Several local olive growers and packers state that the recent frosts have done much damage to the crop which was unpicked. It is thought that those hanging on the trees are going to be a total loss.

### TULARE.

**THE DECAY OF CITRUS FRUIT.**—Lindsay Gazette: Prof. C. W. Woodworth of the Entomological Department of the State University came here on Dec. 16th at the request of Capt. A. J. Hutchinson to look into the matter of decay in the citrus fruits. The professor gave it as his opinion that the decay is what is commonly called the "lemon mold," very closely allied to the common "blue mold," and is a fungus, a plant that lives on and causes the decay of vegetable matter. This particular variety confines itself, as far as known, exclusively to citrus fruits. Its botanical name is Penicillium. Under the professor's directions, Capt. Hutchinson is going to carry out some experiments with a view of reducing the injury caused by the fungus. In the meantime the professor urges all growers to desist from merely plowing under the decayed fruit from their trees, but to bury it deep beyond the reach of plow or cultivator. This is to prevent the spores of the fungus from being carried over to the next year.

**SQUIRREL POISON.**—Porterville Enterprise: The board of supervisors held a special meeting Monday for the purpose of devising ways and means for furnishing poison to farmers for the purpose of destroying squirrels. The board passed an order allowing each supervisor \$500 for the purpose. Each district will have sufficient poison to poison 1000 gallons of wheat. Following is the formula for one gallon of wheat: Strychnine crystal ½ ounce, cyanide potassium ½ ounce, oil anise 10 drops, oil rhodium 5 drops, oil peppermint 3 drops, strained honey or syrup 4 ounces, water 1 ounce.

**CURE FOR HOG CHOLERA.**—A. J. Scroggins, a hog raiser of Dinuba, writes as follows to the Visalia Times: I learn that some of the farmers are losing their hogs from what is supposed to be hog cholera. I have been raising hogs for nearly sixty years and in that time have lost but few. I believe that one gallon of turpentine will cure 100 head of hogs of the disease. I use turpentine by saturating wheat with it—setting the wheat sack on end and pouring one pint of the turpentine in the top of the sack, and allowing the wheat to stand until it is pretty well saturated with the turpentine. I feed this wheat to my hogs once every month. If the hogs are dying take a can and squirt the turpentine over the animals, until the fumes of the turpentine permeates every portion of the exterior of the hogs. I have never known the recipe to fail in all the years I have been a hog raiser.

**HONEY IN A CHURCH.**—Visalia Times: F. McNeil, painter and paper hanger, who is also interested in the bee business, while looking over the Christian Church in Visalia with the purpose of hiding on the painting of that edifice, discovered that some honey bees had found a home beside a window on the south side. The bees had deposited between seventy and eighty pounds of honey between the outer and inner walls of the building. This honey Mr. McNeil appropriated and also the bees, adding them to his apiary.

**HAWKS KILL SQUIRRELS AND GOPHERS.**—Tulare Register: We are requested to tell people about the good that big hawks do, the great big hawks that sit on the fence posts until you have gotten by before they get frightened and fly. It is contended on the part of the friends of these hawks that they don't kill chickens much, but live on squirrels. Now every squirrel caught means a good hit of value to the farmer in grain saved.

### YUBA.

**FROST INJURES OLIVES.**—Marysville Appeal: Hugh Morrison of Reeds Station says the recent frosts have done much damage to the olive crop which is as yet unharvested. In his locality the crop remaining on the trees will prove nearly if not quite a total loss.

### OREGON.

**FIFTY POUND HUBBARD.**—Rogue River Courier: A big squash is occupying a prominent place in the window of Bohzien's store. It was raised by R. D. Lawson on his farm on Rogue river. Mr. Lawson's signature is engraved on the vegetable by the process of scratching the name on the squash in its early youth. As the squash grows, the name also assumes extended proportions. This squash is about 26 inches long and fully 20 inches in diameter, and weighs 50 pounds. For a Hubbard, it is a giant.



## THE POULTRY YARD.

### The Belgian Hare.

TO THE EDITOR:—Let us have some facts to help bring in line again the almost abandoned and one of the most precious meats that we have—that of the once famous Belgian hare. Is it possible that so delicate a meat as this small animal produces should be neglected after once so famous? Besides, they are such clean animals when rightly handled, as their main diet consists of clean, bright alfalfa hay, and for grains chiefly rolled barley, with occasionally some wheat bran. Thus some of our cheapest farm products, with judicious feeding, will produce much delicious meat. But we must not neglect, also, pure, clear water at all times, with a small lump of mineral salt at their command. Clean hutches will favor their habits, as they are particularly cleanly when their necessities are looked after.

As the hare can be managed in connection with the poultry industry, would it not be advisable, and to their interest, as well as those interested, to have them made mention of in your "Breeders' Directory," under the poultry heading, as the "Hares and Poultry." We do not want you to think that we are trying to run your paper, but we only make the suggestion that such a thing would be of benefit to the Belgian hare, which would become a necessity as a food proposition when it is known that their meat is what it is.

Of course, they do not lay eggs, but their habits are, when provided with the necessary material, to make their own nest, lining it with fur from their own bodies, for the protection of the young, which consists of from two to twelve, or even more, according to age and condition of animal, etc.

What we also want is uniformity in vitality and marking, which can be kept to the desired standard by proper mating, which will also add to the delicacy of their meat. Another important thing that must not be overlooked is that, as they are sometimes addicted to gnawing, a few branches of some tree or bush is of material benefit to their welfare, giving them exercise, as well as something for a change of diet or tonic. They are very fond of cottonwood, willow, etc., which have quite a bitter bark. They willingly peel of and eat it when offered the opportunity. It is not for want of food, as we very often give ours something of the kind while they have food by them, but they will leave it for something of this kind.

COTTONWOOD FARM.

Pleasant Grove.

We have no objection to including hares with poultry in our Breeders' Directory, but some one must start the advertising. The headings should agree with what follows. It will take the Belgian hare some time to recover from the inordinate booming which was given it; but it certainly should not be lost sight of as a good food-producing animal, and should be judiciously advertised, just as other good things are.

## THE VETERINARIAN.

### Lung Worms in Calves.

We had several interesting contributions on this subject last year. At their last meeting the Humboldt county supervisors received the following letter from State Veterinarian Charles H. Blemer, calling attention to an infectious disease discovered among calves shipped from their county:

THE DISEASE.—The disease in question is that of Vermineous bronchitis and affects only calves; it is caused by the Strongylus micurus, a nematoid or hair-like worm from  $\frac{1}{2}$  inch to 3 inches in length, which inhabits the bronchial or bronchial tubes of the infected animal; numerous species of the Strongyli have been found in the lungs of calves, but

the above mentioned is the only one so far discovered in this State. The mortality from this disease is quite heavy, as shown by an outbreak of Vermineous bronchitis in a bunch of 550 calves imported into Fresno county from Humboldt county, over 400 of them dying in less than eight weeks.

SYMPTOMS.—The symptoms are an infrequent dry cough, which gradually increases, becoming strong and husky, ending in paroxysms and suffocation as the disease advances. Mucous streaked with blood is often expelled from the mouth and nasal cavities. The animal, through loss of appetite, disordered nutrition, etc., rapidly becomes emaciated. It is believed that the embryos do not develop in the host, but must necessarily be expelled to pass the first stages of their existence—they live in water for an indefinite period, and it is stated that a dried embryo under certain conditions will revive when placed in water. No satisfactory theory has ever been given as to how the worm enters the bronchi; but the infection in all probability takes place through the water or along with the food, such as damp grasses.

Owing to the hardness of the worm, treatment of any kind does not seem to be of much benefit. Chloroform or ether combined with oils of turpentine and amber, equal parts, with a little formaldehyde as an inhalation, gave the best results. Pour one or two teaspoonfuls of this mixture into the nostrils, elevate the head and allow it to evaporate. Bitter, stimulating tonics, inductive of arousing digestive functions, are to be given. The preventive measures to be taken against this disease are rather uncertain, owing to our ignorance of the life history of the parasite; however, the draining of damp pastures and the destruction of animals that have succumbed to this disease is of the utmost importance, and calves should be kept from infected pastures. I have a record of several outbreaks that came from your county, and some radical measure must be taken immediately to stop the spread of this scourge. I trust that it will be given prompt attention.

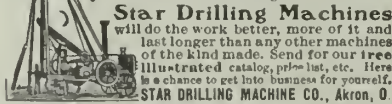
## Horse Owners! Use



**COMBAULT'S Caustic Balsam**  
A Safe Speedy and Positive Cure  
The Safest, Most BLISTER over used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

## HOW MANY MEN

in your neighborhood need wells for home supply or live stock purposes? Just take the time to count them, then figure up the money you could make in drilling those wells.



Star Drilling Machines will do the work better, more of it and last longer than any other machines of the kind made. Send for our free illustrated catalog, price list, etc. Here is a chance to get into business for yourself. STAR DRILLING MACHINE CO., Akron, O.



## CYPHERS INCUBATOR,

World's Standard Hatcher. Used on 26 Gov. Experiment Stations in U. S., Canada, Australia and New Zealand, also by America's leading poultrymen and thousands of others. Gold medal and highest award at Pan-American, Oct. 1901. 32-page circular free. Complete catalogue, 164 pages, 8x11 in., mailed for 10c. Ask nearest office for book No. 1.

Sole Pacific Coast Agent, E. J. Bowen, 815-817 Sansome St., San Francisco, Cal., 201 204 Front St., Portland, Oregon, 212 Occidental Ave., Seattle, Wash.



## SHOENAKER'S POULTRY

BOOK OF and Almanac for 1902. 160 pages, over 100 illustrations of Poultry, Incubators, Brooders, Poultry Supplies, etc. How to raise chickens successfully, their care, diseases and remedies. Diagrams with full description of Poultry houses. All about Incubators, Brooders and thoroughbred Poultry, with lowest prices. Price only 15c. C. C. SHOENAKER, Box 243, Freeport, Ill.



## \$300,000,000.00 A YEAR

and you may have part of it if you work for us. Uncle Sam's poultry product pays that sum. Send 10c for samples and particulars. We furnish capital to start you in business. Draper Publishing Co., Chicago, Ill.

\$7000 WILL BUY 1747 acres substantially improved; farming implements included. An exceptional opportunity for grain and stock raising. For full particulars address H. H. MINER, Le Grand, California.

## A NEW YEAR RESOLUTION FOR GOOD DAIRYMEN

With the protection of honest butter from fraudulent competition seemingly in sight through the proposed national law now before Congress, 1902 should prove a most successful and prosperous year in dairying where conducted in up-to-date businesslike manner.

The dairy-farmer who is skimming his own milk at home from any reason can't possibly make a better New Year resolution than that **he will purchase a DE LAVAL separator within the next three months.** It will save its cost within the year. Its use means a better product and more of it, the saving of much of the drudgery of dairying to wife and daughter and improvement in every way. In fact a De Laval machine and dairying prosperity have come to go hand-in-hand, whether in factory or home separation.

A De Laval catalogue may be had for the asking. It is well worth reading whether you want a separator or not.

## THE DE LAVAL SEPARATOR CO.

RANDOLPH & CANAL STS., CHICAGO. General Offices: 1102 ARCH STREET, PHILADELPHIA.  
103 & 105 MISSION ST., SAN FRANCISCO. 74 CORTLANDT STREET, NEW YORK. 327 COMMISSIONERS ST., MONTREAL.

## More Proof Showing that the DeLaval Co.

ARE TELLING THE TRUTH WHEN THEY ACKNOWLEDGE THAT THERE

## HAS BEEN LYING about PARIS SEPARATOR AWARDS.

In our last advertisement we referred to three statements that were in a recent DeLaval advertisement, by which they hoped to make readers believe that the name "Aktiebolaget Separator" did appear on the official list of awards distributed at the Paris Exposition and claiming "Aktiebolaget Separator" to be their European organization, regardless of the fact that less than a month before they claimed "Societe Anonyme Separator" to be their European organization. However, they dropped this latter claim like a hot iron when we proved that "Societe Anonyme Separator" exhibited at Paris a Butter Radiator and not a Cream Separator, and are again claiming "Aktiebolaget Separator."

One of the letters referred to purported to be signed by the U. S. Consul-General at Stockholm, Sweden, under the date of April 17, 1901, reads as follows:

"From evidence this day furnished me I am able to certify that the Separator Company, Ltd., (Aktiebolaget Separator) of this city did receive the 'Grand Prize' for their Alpha-DeLaval Separators at the Paris Exposition in the year 1900, as per announcement in the 'Journal Officiel' Paris, of August 18, 1900, this day presented at this office."

NOTICE, this statement says "as per announcement in the 'Journal Officiel' of August 18, 1900."

### Grands prix.

Egrot et Grangé et Guillaume. — France.  
Société anonyme Separator. — Suède.  
Simon frères. — France.  
Burmeister et Wain. — Danemark  
Garin (Edinond). — France.  
Domaine de la couronne et des naves Godollo. — Hongrie.  
Domaine de l'Etat Bozja-Kovina. — Hongrie.  
Administration du domaine de la couronne. — Roumanie.  
Kubers Einsen werk. — Allemagne.

### Médailles d'or.

Jacq  
Baquet  
Fermi  
Niels  
Peliss  
Carn  
Merc  
Dair

Ch  
Bet  
Ant  
Eul  
Par  
Ja

As to the truth of this we ask the readers to examine the photographic reproduction given herewith of the list of winners of the Grand Prize at Paris in Class 37, the one in which cream separators and other dairy goods were entered, as published in the 'Journal Officiel' dated August 18, 1900, and see if they can find the name of "Aktiebolaget Separator." We cannot and do not believe anyone else can.

Also notice the date of the statement—April 17, 1901, then bear in mind that seven months later, in November, 1901, the DeLaval Co. claimed their award through the "Societe Anonyme Separator," but being cornered, they go back to their former claim that the award came through the "Aktiebolaget Separator."

In the light of this photographic reproduction and these statements we claim that our statement that the Official List of Awards published and distributed at the Paris Exposition contained no mention of any award to the DeLaval Separator Co. or the Aktiebolaget Separator is absolutely true.

The sum and substance of the whole matter is it is terribly galling to the DeLaval Separator Co. to be continually beaten by the United States Separator, and they attempt to bluff off their defeats by publishing all sorts of statements in their advertisements, claiming first one thing and then another. It shows that they have very little respect for the intelligence of readers when they make separate and contradictory claims within two weeks of one another.

## THE UNITED STATES SEPARATOR WINS ON ITS MERITS

AND STANDS TO-DAY THE

## STANDARD SEPARATOR OF THE WORLD.

VERMONT FARM MACHINE CO., Bellows Falls, Vt.



# BLACK LEG VACCINE.

**Do Not Delay Vaccinating--Your** herd IS LIABLE to attack NOW and if you delay vaccinating until after Black Leg has broken out you are almost sure of a 5% loss, and as even a 1% loss will cost more than vaccinating, it pays to vaccinate before trouble begins.

**Our Vaccines** are tested on control animals before placing on the market and they are subject to exchange for fresh vaccine if not used within six months from date of manufacture. **They have been successfully used for three years in the worst infected districts of California.**

**Our prices are lower than others',** and the growth of our business in the last three and a half years attests that our products and liberal methods are meeting with the approval of stockmen.

**Our friends are among those who have hitherto used foreign and other vaccines.**

**Testimonials.**—To prospective customers, who desire references, we shall be pleased to furnish them. **WE CAN ALSO REFER TO STOCKMEN WHO HAVE REVACCINATED WITH OUR VACCINE AFTER UNSATISFACTORY TRIAL OF FOREIGN AND OTHER VACCINES.**

## PRICES OF BLACK LEG VACCINE:

SINGLE, per package, containing ten or more doses, according to age of animals.....	\$1 25
DOUBLE, per double package, containing ten to twenty doses, according to age of animals....	1 75
STRINGS, per package of 10 doses, including needle.....	1 25
Per package of 15 doses, including needle.....	1 75
Per package of 25 doses, including needle.....	2 50
Per package of 50 doses, including needle.....	4 75
VACCINATING OUTFIT, complete for using single and double vaccine.....	4 00
BLACK LEG SYRINGE, with two needles and extra washers, all in metal case	3 00

**TERMS.**—Cash with orders or we will send by express, C. O. D. We prepay all charges. Special discount to users of 500 or more doses.

Write us for booklet on **BLACK LEG** and **ANTHRAX**. They are readable and interesting even if you apprehend no trouble from these diseases.

For references to successful users and for further particulars concerning these and our other products, Address

**THE CUTTER ANALYTIC LABORATORY,**  
FRESNO, CALIFORNIA.



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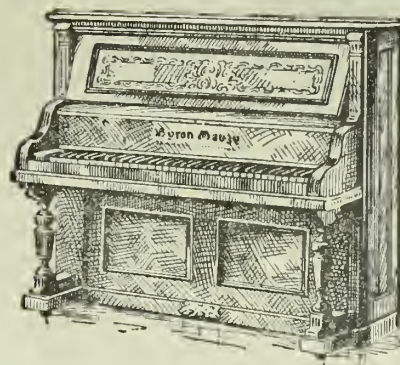
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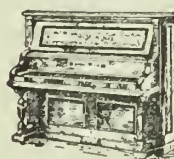
# SOHMER



Byron Mauzy, Lester Hamilton  
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## PIANOS

All grades and all prices—from \$175 to \$600—  
Art pianos \$600 to \$1,000. Our bargain room  
has some well known makes from \$100 up  
Cecilian Piano Player — Concerts Daily.



You are wel-  
come to visit  
our piano fac-  
tory and see a  
piano made.

We are mak-  
ing some pipe  
organs, \$600  
to \$1200; call  
and see one  
just finished.



## BYRON MAUZY

308-312 Post St., San Francisco  
All pianos marked in plain figures

## "BLACKLEGINE"

Pasteur Blackleg Vaccine Quite Ready for Use.

This is in the form of a cord impregnated with the vaccine. Each dose is separate and applied with a special needle. The dose is hitched on to a notch in the needle and then inserted under the skin at the shoulder. The needle is provided with a detachable handle. Vaccination with "Blacklegine" is as rapid and easy as taking a stitch. There is no dissolving, or mixing, or filtering a powder; no injecting or trouble in measuring doses; no expensive syringe outfit.

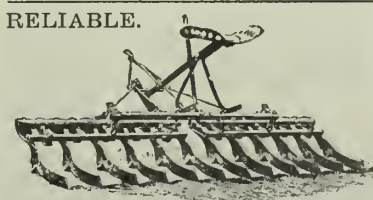


BLACKLEGINE OUTFIT, SHOWING NEEDLE INSERTED IN HANDLE AND DOSE OF VACCINE ATTACHED READY FOR VACCINATING.

**Prices:** "Single Blacklegine" (for common stock): No. 1 (ten doses), \$1.50; No. 2 (twenty doses), \$2.50; No. 3 (fifty doses), \$6.00. "Double Blacklegine" (for choice stock) (first lymph and second lymph, applied at an interval of eight days), \$2.00 per packet of ten double doses. Blacklegine Outfit (handle and two needles), 50 cents.

**PASTEUR VACCINE COMPANY,**  
Chicago, New York, Omaha, Kansas City, Ft. Worth, San Francisco.

RELIABLE.



## ACME Pulverizing Harrows.

NEW STYLES. ALL SIZES.


Coast Agents: **BAKER & HAMILTON,**  
San Francisco, Sacramento, Los Angeles, Portland, Or.  
WRITE FOR CATALOGUE AND PRICES.

**\$50.00 RANGE FOR \$25.00**

TO INTRODUCE THE

**WILLARD STEEL RANGE** into every section of the United States. We will for a short time deliver at your depot free of charge our highest grade Steel range for \$25.00. The regular retail price is \$50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21 1/2 inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. **WM. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo. Dept. 8.** Will ship C. O. D. with privilege of examination.






**The New Kentucky** Interchangeable Shoe and Disk Drill

meets exactly the demands of the farmer who wants both a shoe and disk drill and who does not wish to make the expenditure necessary for two drills. In case of the Kentucky one drill does the business. Our disk bearing—absolutely dust proof, specially chilled will wear as long as the disk and is only two inches wide over all, leaving abundant room for clearance of clods, sods, rubbish, etc. Disks easily set at any desired angle. Our Detachable Heel Shoe is already too well and favorably known to tell about it here. Shoe heel may be instantly detached and sharpened at almost no cost. New heels cost less than sharpening old style shoes. Shoes and Disks easily and quickly interchanged on the New Kentucky Drill. Fit every condition of soil and all varieties of crops. All about it in our New Illustrated Catalogue. Copy mailed free. Ask for it.

**Brennan & Co., S. W. Agricultural Works,**  
Dept. P, Louisville, Ky.

Shipped from Minneapolis, Minn., Spokane, Wash., Council Bluffs, Iowa.



**PATENTS**  
Obtained in all civilized countries. Expense saved inventors by preliminary searches. Communications confidential. Inventors' guide free on request. **DEWEY, STRONG & CO.** (Established 1860), 330 Market Street, San Francisco, Cal., and 918 F Street, Washington, D. C.



## THE HOME CIRCLE.

## A New Year Proposal.

"What resolutions have I vowed to keep the coming year?  
Come, sit beside me, maiden fair, and straightway you shall hear:  
I've pledged myself to choose one girl from out the throng so gay,  
And love her with an honest love forever and for aye.

"I'll work for her with brain and brawn, with all my might and main,  
Until I've won her everything that honesty can gain;  
I'll fill her life with all that's good, till life itself is done—  
And while we train our minds and hearts we'll not neglect the fun.

"Now, tell me, won't you, maiden fair, what you have vowed to do—  
For I've laid bare my inmost soul to no one but to you?"

"I've made no pledges," she replied, in so demure a tone,  
"But, if you don't object, I'll try to help you keep your own."

—Wallace Dunbar Vincent, in Frank Leslie's Monthly.

## Hoodwinked.

It was at a country house party. Feeling lazy, I had stopped at home with my hostess while the others had gone out pheasant shooting.

Mrs. Carruthers suddenly looked up from her embroidery and spoke. However, I was not deceived by the apparent unpremeditation of her question, because I had felt for some moments that she was on the point of saying something.

"Phil, what do you think of Clare Delayne?" and she resumed her work in the most unconcerned manner.

I hesitated a moment. Clearly, I must be very careful, for it is at all times a most risky thing to give one woman your opinion about another. In the majority of cases—mind, I only generalize—if your opinion is enthusiastic you incur the one woman's displeasure; if, on the other hand, your praise is only qualified—well, keep out of the other woman's way. And in the present instance the danger was doubly great. Why had I, who am generally so wary, allowed myself to be left alone with my hostess, the most inveterate matchmaker of the county? I felt that my whole future hung on my reply, and as all this flashed through my mind a mental resolution to this effect, that if Mrs. Carruthers was a matchmaker she had now found her match. So I asked, "And who is Miss Clare Delayne?"

"Why, you silly boy, that pretty blonde you took in to dinner last night; you know, she only came yesterday."

"Oh, that one," I said disrespectfully, trying to kill a bluebottle. "I did not catch her name when I was introduced," and I resumed my chase after the bluebottle. There was a pause while I wondered in which direction the next attack would be developed.

"Phil, my question!"

"Which question?" That bluebottle did fidget me so, and I made a desperate dash at it, cleverly managing at the same time to upset Mrs. Carruthers' workbasket. But all attempts to draw a red herring across the path seemed futile.

"Open the window, Phil; that's right, your fly has gone. Now pick up my basket, and tell me what you think of Clare Delayne."

I was on all fours salvaging needles and balls of wool. "I think she"—I suddenly pricked up my ears and listened. "I do believe they are coming back," I cried.

"You think she is—what?"

"I haven't thought anything about her at all. What do you think about her?"

This sudden turning of the tables took Mrs. Carruthers by surprise, and for a moment she was nonplussed. But she quickly recovered herself and deployed on the ground from which I had retreated.

"Well, I was going to tell you when you interrupted me with that absurd fly, that her father is a dear friend of

mine, and she will inherit £1500 a year when he dies—"

"Indeed!" I interrupted with interest.

"Of course, it is not much," she went on, encouraged by my look of interest, "but it is a little help; and when combined with the sweetest nature and all the domestic virtues—"

"She is just the girl," I put in eagerly.

"She is, as you say, just the girl to make a man happy."

"But does she want to marry?" I asked, jumping up.

"You silly fellow, what girl doesn't? You have only got to ask them."

"Well, if that is the case—"

"She is also fairly well read, not too well—a man does not want that—and she is musical."

"If that is the case, as I was saying before, she is just the girl for Captain Rodgers," I said. "He is—"

Mrs. Carruthers picked up her work and sailed toward the door. "You are an ass, Phil!" was her parting shot.

"Rodgers is musical," I called out, as the door slammed.

As a matter of fact, I had been particularly entertained by my partner at dinner last night, who had seemed to me what is generally described as "a jolly girl with no nonsense about her." I did not wish to be pestered any more by Mrs. Carruthers, who had evidently come to the conclusion that I was a fool, and so rather than put her on her mettle by offering a show of resistance, I thought the best way to secure peace would be to do all that was expected of me, and, like Brer Rabbit, "lay low and say nuffin." And so what more natural than that I should find myself again taking Miss Delayne in to dinner that evening.

"Do you know, I expected that you would take me in to dinner to-night?" she said, as we sat down.

I looked up surprised. There was a world of mischievous meaning in her tone and look, and I gasped. Was I to be taken in the flank by another enemy, or was it possible that she, too, understood?

"Is it 'great expectations'?" I ventured. She nodded. Still I was not satisfied. "You surely do not think so badly of me as to believe—" I hesitated.

She burst out laughing. "There! I have so much faith in you that I will congratulate you on having an income of £2000 a year!"

"Now, really, this is wonderful!" I cried. "And I, too, must congratulate you on being an heiress to the tune of £1500 a year!"

"Say, rather, 'condole with,'" she added. "But who told you?"

"A little bird," I answered. "And who told you?"

"Evidently the same little bird."

"A very old bird, if you ask me," I exclaimed, checking myself too late to avoid one of those sudden hushes to which every dinner table is subject. A titter went round the company. Horrors! There was a helping of pheasant before me. I heard Mrs. Carruthers saying, sweetly, "I am so sorry, Phil; try another piece." I vainly protested that I had not referred to the fowl, but being greeted with cries of "Name! Name!" I retracted and had another helping. The contretemps was very annoying, as I felt that I was now thoroughly in Mrs. Carruthers' bad books, and although she did not know what we had been talking about, still—such is the effect of a guilty conscience—I felt sure she must think that I had referred to her. Miss Delayne also did not seem over pleased at my innocent indiscretion which had directed the company's attention to her, and she occupied herself with Captain Rodgers, who was on her other side. Rodgers had only arrived before dinner. He was an old acquaintance of mine, one of those generous, good-hearted sort of fellows who is always stone broke, and who will always step into the breach to help a friend.

I had often told him that I would one day find him a rich wife, but now that I saw him talking with Miss Delayne I did not feel so particularly keen about my suggestion to Mrs. Carruthers, as it happened to interfere with a brilliant plan I had just thought of and which

would dish Mrs. Carruthers so nicely. I recognized at once that it would be difficult to put the case too bluntly to Miss Delayne, so accordingly, when later in the evening I found myself ensconced with her in the conservatory, I proceeded to let her unfold the plans I had thought out over my cigar. I little thought what would happen in the same conservatory in about three week's time.

"Mrs. Carruthers is a most entertaining hostess and an amiable woman," I remarked, by way of preface, "and she has one pet sin. But this is the first time she has applied her energies in my direction, although she has known me ever since I was so high."

"What are you going to do?" asked Miss Delayne.

"Rather ask, 'What are we going to do?'" I said, not wishing to reply to such a delicate personal question. "It all rests with you," I continued, adding quickly, "whether we are to displease her by avoiding each other or deceive her by pretending to fall in with her views."

Miss Delayne's eyes twinkled.

"Mr. Mellor, you forget there are other ways. I might, for instance, pretend that I did not want your company, while you could easily satisfy Mrs. Carruthers by your actions that you were doing your best to carry out her schemes."

"Yes," I assented, not at all eagerly.

"Or," she continued, "you could leave suddenly to-morrow on urgent private business."

"Quite so," I faltered.

"But it would be very selfish of me to spoil your holiday here?" ("Not at all"), I interrupted, "and I rather like your second idea. In fact, it would be great fun, I think, to upset Mrs. Carruthers' little plans for once."

"That is just what I thought," I exclaimed.

"We could be a lot in each other's company," she said.

"And especially when Mrs. Carruthers is about," I added.

"I have expectations, and don't want any man to marry me for them."

"And I have money, but if I took a wife she should only take me for my merits."

"That is capital," she said. "Then we are agreed in our views of life. Let us shake hands upon it."

We shook hands.

"We shall have great fun out of it," I said.

"And be the best of friends," she added. "Poor Mrs. Carruthers," she laughed, and then a look of doubt crossed her face. "What shall we say to her if she puts the direct question to either or both of us when we leave?"

"That is very simple," I answered.

"We need merely say, 'We found out at the beginning that our views of life were similar, and that it was therefore no use of our thinking of marriage.'"

"A neat epigram," she laughed.

\* \* \* \* \*

That evening when I said good-night to Mrs. Carruthers she remarked playfully, "I am sorry about the old bird, Phil."

"So am I, very sorry," I said, "but old birds cannot help being caught sometimes," and I went to bed feeling that I had scored.

The days passed quickly enough at first, and Miss Delayne and I spent a great deal of the time with each other. We sat together at meals, we walked together, we rode together, and we continued to derive great amusement from the covert interest which Mrs. Carruthers appeared to take in the apparent progress of her scheme. I soon found also that we had many other things in common besides our views about marriage, and therefore Miss Delayne's company became in every way a source of more pleasure to me than I had reason to anticipate when we laid our plans.

This possibly created a desire on my part to strictly enforce the terms of our compact, and because Miss Delayne did not always fall in with my ideas as to how much we should be together, I attributed this rather to a falling off of enthusiasm on her part, which in its turn tended to increase my efforts.

Another and unlooked for factor gradually appeared on the scene to confuse our plans in the shape of Captain Rodgers. Perhaps I was really right in thinking that Miss Delayne was not keeping to her compact as much as she ought to, but certainly this was partly the fault of the captain. The way he looked at her and spoke to her was a source of great annoyance to me, because no doubt Mrs. Carruthers would notice it, and our little game would thereby be spoiled. And therefore I felt that Miss Delayne should not encourage him; but when I mentioned the matter to her she did not see it in that way at all.

As the days went on I found that Rodgers was always at her side when I happened to be away for a moment, and he began even to accompany her on some of her outings. I remonstrated with her about this also, but she replied that we must be careful not to overdo our parts, and as I did not in any way wish her to think she was being compromised by me, I had to acquiesce in this, while tacitly writhing with a desire to kick Rodgers. It was impossible, too, I thought, for me to take him into my confidence, because, apart from the fact that it was not my secret, he might then openly declare that he did not recognize the game or my right to monopolize Miss Delayne if I had no serious intentions.

Was it possible that Mrs. Carruthers, having despaired of me, and being determined to make up a match for Miss Delayne, had put the captain on after all? If that was the case, I would thwart her at all costs, and so I made every effort to forestall Rodgers on all occasions.

But the more I tried to be with Miss Delayne the more she contrived to keep out of my way; neither could I get any satisfactory explanation from her. In fact, she could not or would not see that she was not carrying out her part of the agreement. Her way to me had gradually become more reserved than it was at first; there was not the confidence and feeling of equality which I had found in the beginning, and, of course, it was all through that confounded Rodgers. I began to see that the game was not going to come off, and the sooner I left and ended it the better, as such a triviality was not worth the disturbance of my peace of mind. Accordingly I made my preparations, and that evening I told Miss Delayne about my intentions.

"I find that I shall have to leave to-morrow morning," I said.

"Indeed!" she replied. "I am very sorry."

She certainly appeared most unconcerned.

"Why are you sorry?" I said, feeling my way on to sentimental ground.

"Well, because you are going before me, and I am afraid that Mrs. Carruthers will ask me the fatal question."

"Is that all?" I asked, disappointedly.

"I was hoping—"

"I see you think it rather selfish of me," she interrupted; "but I always think epigrams are so near to—to—"

"To what?" I asked.

"To the truth; at least—"

She hesitated.

"Well, you surely need not be afraid to say if it is the truth," I said.

"No; but then, you see, an epigram is supposed to be—"

"Oh, dear, I do not know what I mean. Why, how late it is. Suppose we join the others."

All of which was most unsatisfactory.

I was to leave in the morning soon after breakfast, and when the hour for departure had come round I went in search of Miss Delayne to say good-by. Now that I was on the point of going I felt sorry about it; indeed, it seemed to me that whatever pleasure I might derive from Mrs. Carruthers' now very problematical disappointment would seem to be more than counterbalanced by the uncertainty into which I should drift as to Miss Delayne's future movements. For, to be truthful, I was rather nervous about mentioning the subject to her since this reserve had come between us. I found her reading in the conservatory, the place where our plans had been sown and where their fruits were now about to be gathered. Perhaps she had thought



I should look for her there; certainly I was not surprised to see her.

"I have come to say goodbye," I said, awkwardly. She closed her book and got up with a smile.

"Well, do not say goodbye; rather let it be au revoir," she said.

"You do not mean that," I exclaimed.

"I thought—"

"But why not? We are sure to meet in town somewhere."

"And you will let me know if Mrs. Carruthers says anything to you?" I asked, indifferently. Now that it was all over the plan seemed to have fallen to dust in its very feebleness. What had it effected? It had tied me hand and foot, and I knew, now that I was leaving her, what it had wrought for me.

"Of course, I will if you care," she said. "We have had very nice times together, haven't we?"

"I shall not forget them," I said, "if only you—"

"Phil, Phil, where are you? The carriage is here," called Mrs. Carruthers, as she ran into the conservatory. "Oh, here you are; I am so sorry you must go."

"Well, goodbye," I said, taking Miss Delayne's hand and holding it for the benefit of Mrs. Carruthers, who was looking curiously at us. I felt the hand pull, but I retained it in my grasp as Mrs. Carruthers said:

"Now, Clare, now, Phil; you naughty young people, you are not going to keep anything from me. Come, tell me all about it before you go."

I still retained the hand—it was so convenient for the denouement. Which of us should speak? I looked at Miss Delayne, but she gave me no encouragement.

"I hope you won't mind, Mrs. Carruthers," I began, apologetically, "but—but—" I had forgotten my part.

"We found at the beginning," said Miss Delayne, "that our views of life"—I continued hurriedly, "were—"

"Were similar," put in Miss Delayne.

"And that," I added, "that it was, therefore, no use—"

I felt the hand tremble. I looked up into her eyes, and as the scales fell from mine I went on, "that it was, therefore, no use our ever thinking of parting."

Mrs. Carruthers had left us. I heard her voice saying, "Send the carriage back; Mr. Mellor is staying on."

Then I heard her say, "Captain Rodgers, how can I thank you?"

The old bird had scored after all.—The Tattler.

### New Year's Day in Japan.

Somehow, though the sun may have shone just as brightly on the previous day, and indeed the whole year round, yet it all seems changed and different on this, the first day of the year. It is the spirit of the New Year! This is the time of universal peace and goodwill; when the inhabitants of the little empire start life anew with fine resolutions and promises for the future, and ill-feeling done away with.

The first of January bears the significant title of Gansan (the Three Beginnings), meaning, beginning of the year, beginning of the month, and beginning of the day. And to this might be added the beginning of a new and better life. What Christmas is to the Occidentals, New Year's is to the Japanese, although greetings and congratulations are not confined to the first day of the year, but at any time between the first and the fifteenth.

The Japanese begin to prepare for the New Year nearly a month before, and in fact give their houses and possessions a thorough cleansing, just as the good American housewife does in the springtime. Even the very poorest people do this, laying mats of rice straw, and cleaning every nook and corner with fresh bamboo dusters and brooms, which are said to symbolize prosperity and good fortune. And after the house has been aired and cleaned, it is decorated with pine and bamboo, for the Japanese venerate both of these, because they keep green through the entire winter and symbolize longevity. The Japanese read in

the most insignificant natural objects some striking significance, and there is a meaning attached to almost every decoration or ornament in the house. The outsides and gardens of the houses are also beautifully decorated, to say nothing of the streets, which present a most interesting and animated spectacle at this time.

On New Year's eve the streets and stores, which at this time display their most attractive goods, are thronged with people intent on buying the requisites for the coming year. At night the streets are beautifully illuminated with lines of big lanterns, family crests, flags, shop signs, etc., hung from every store. On this eve many of the people remain up all night, and watch the old year out and the new year in, though a few old-fashioned ones prefer the custom of rising very early in the morning to worship the first rising sun of the new year.—Onoto Watanna, in Frank Leslie's Monthly.

### Good Lights.

Much has been said and written concerning the best lamp flues and burners to use in order to have good lights, but neither one is so important as to keep the burners clean. Many lamps give a dull, feeble light, or have been set aside as dangerous, because they are not properly cared for in this respect, and the dust has accumulated in the small air tube at the side of the wick. The remedy is so simple that there is no excuse for this condition of affairs.

New lamp flues are toughened and made more durable by putting them in water and heating it gradually until it is boiling hot. When they have boiled five minutes set them off of the stove and allow them to cool in the water. In addition to the daily filling of the lamps and cleaning of the flues, the burners should be boiled once a week in water containing enough washing powder to make a good suds. This will remove the oil and leave them bright and clean. Polish with dry flannel.

Use none but the best oil, and the lamp should be kept full to insure a good light. Keep the reflector—if it has one—brightly polished. Do not cut the wick, but turn it just above the tube and rub off the charred portion with a match.

### Pleasantries.

"Is your daughter learning to play by note?" "Certainly not," answered Mrs. Cumrox, a little indignantly. "We pay cash for every lesson. The idea!"—Washington Star.

GLADYS—What's become of Mabel? "Belle—She's joined the great majority. Gladys—You don't mean to say she's dead? Belle—Oh, no! Married a man named Smith.—Tit-Bits.

TOWNE—Do I understand you to say that Spender's case was really a faith cure? Browne—Yes. You see, the doctor and the druggist both trusted him.—Philadelphia Press.

LITTLE ETHEL—Mamma, I know why it isn't safe to count your chickens before they're hatched. Mother—Why, dear? Little Ethel—Coz sum of 'em might be ducks.—Ohio State Journal.

"They tell me you broke three ribs coming across the field. How did it happen?" "I was beating off the bulldog with my umbrella."—Chicago News.

GENTLEMAN (indignantly) — When I bought this dog you said he was splendid for rats. Why, he won't touch them. Dog Dealer—Well, ain't that splendid for rats?—Tit-Bits.

SUNDAY SCHOOL SUPERINTENDENT—Children, what are we to tell Satan when he tempts us to commit sin? Children (with one voice)—Go 'way back and sit down.—Chicago Tribune.

"No sir," exclaimed the loud-voiced drummer in the smoker, "I'm proud to say that no house in the country has more men pushing its line of goods than ours." "What do you sell?" asked a curious one. "Baby carriages."—Syracuse Herald.

## DOMESTIC ECONOMY.

### Domestic Hints.

MILK BLANC MANGE.—Pour half a pint of milk into an enameled saucepan, together with an ounce of isinglass, a teaspoonful of rosewater and a tablespoonful of castor sugar. Stir gently over a clear fire until the milk is nearly boiling, then remove from the fire, and stir until nearly cold; pour into a mold which has been rinsed in cold water. Turn out the blanc mange next day.

FRICASSE OF EGGS.—Set two ounces of butter in a stewpan and when dissolved add chopped parsley, a little finely minced onion, with pepper and salt to season. Stew this until the seasoning is cooked, then add a cupful of milk and a little flour to thicken the whole. Boil four eggs until hard, peel off the shells carefully and cut into slices; each egg should make four or five slices. Set the eggs into the sauce, let all come to the boil, and set in an entree dish at once. If preferred, substitute gravy for milk.

APPLE MERINGUE.—Peel and halve tart apples. Make a syrup of granulated sugar and water and put the apples in it, letting them cook until they can be pierced with a straw. Arrange the apples on the platter they are to be served in; boil the syrup down and pour over the apples. When cold, heap irregularly with a meringue of the whites of four eggs, four heaping tablespoonfuls of pulverized sugar and the juice of a lemon. Sprinkle with chopped almonds, then set in the oven on a board and brown quickly. Serve very cold with a rich custard.

BEEF CROQUETTES.—One pound of roasted or boiled beef, one onion, two small eggs, three boiled potatoes, two tablespoonfuls of flour, a small piece of butter, a little pepper and salt to taste. Chop the onion fine and brown it carefully in the butter. Chop the meat fine and the potatoes as for hash. Put the meat, onions and potatoes in a chopping bowl and mix thoroughly. Add the eggs slightly beaten, and season with pepper and salt. Mold into croquettes, roll thoroughly in flour and fry until brown. These may be served garnished with parsley or in tomato sauce.

PLAIN CHRISTMAS CAKE.—Beat half a pound of butter to a cream, sift one quart of flour with half an ounce of ground ginger and one rounding teaspoonful of cream of tartar. Add to it half a pound of brown sugar, half a pound of seeded raisins and mix thoroughly. Add to the softened butter half a pint of good sweet cream, half a pint of New Orleans molasses and two eggs well beaten. Moisten a level teaspoonful of bicarbonate of soda into two tablespoonfuls of water. Add to the mixture and turn this into the flour. Mix and pour into a baking pan lined with greased paper. Bake in a moderate oven for about two hours.

IRISH MOSS BLANC MANGE.—Let one tablespoonful of Irish moss remain in tepid water for fifteen minutes, then put in a strainer and hold under the faucet, allowing cold water to run over it for one minute. This removes the crude seaweed flavor. Put the moss in one pint of milk and let simmer for fifteen minutes. Remove from the stove and press through a colander to break up the moss, retaining a part of it in the blanc mange. Some persons prefer that all the moss be retained. When almost cold, stir in two saccharine tablets which have previously been dissolved in a little water, and add vanilla extract. Pour in individual jelly moulds, and, when ice cold, serve with cream.

TAPIOCA AND APPLE PUDDING.—Six good, tart cooking apples, three-quarters of a cupful of pearl tapioca, sugar to taste and add one quart of water. Soak the tapioca in the water two hours, then put in a double boiler and cook until clear; sweeten to taste. It may be flavored with the rind of a lemon cut very thin and removed when the tapioca is done. Peel and core the apples and fill the holes with sugar; arrange them in a pudding dish and pour the tapioca over them; bake until the

apples are tender. A few tiny bits of butter on the top will make it brown a little. Serve hot or cold with cream and sugar.

SWEET POTATOES MASHED AND BROWNED.—Boil sweet potatoes of medium size until done. Peel and squeeze through a good vegetable strainer, add a heaping tablespoonful of butter, salt and pepper to taste, and enough milk to make very soft. Put in a baking dish, dot it over with tiny bits of butter and bake until brown. Serve in the dish in which it is baked. If any is left over remove the thin, brown skin, make the potato into small, flat cakes and brown on both sides in a little butter in a spider.

CELERY SANDWICHES.—Use dainty little baking powder biscuits freshly baked but cold, or white home-made bread for these sandwiches. Only the very tender part of the celery should be used and chopped fine and put in iced water until needed. Add a few chopped walnuts to the celery and enough mayonnaise dressing to hold them together; butter the bread before cutting from the loaf, spread one slice with the mixture and press another over it. If biscuits are used split and butter them. They should be small and very thin for this purpose and browned delicately.

### Hints to Housekeepers.

Stained brass may be cleaned with whiting and ammonia.

The popular belief that flowers are unhealthful in the sick room is now very generally denied. Provided that their odor is not heavy or distasteful to the invalid, and that they are perfectly fresh, flowers exert a beneficial effect rather than the contrary.

Sweetbreads, celery and English walnuts make a splendid salad combination, or combine English walnuts and celery to make a delicious nut salad. Tart sour apples and celery, or apples and nuts are often used together. Shrimps, oysters, lobsters, fish, eggs, etc., are combined with celery, lettuce or cresses to produce many varieties; in fact, the possibilities of the salad combinations are unlimited, the principles of making them the same in all.

One way of varying the monotony of baked potatoes is to cut off the end, remove the inside, mash, adding milk, butter, salt and pepper, the same as for mashed potatoes. Then place the mashed potato back in the potato shells, stick in the end of each a slice of bacon fried crisp. Place it in the oven and heat through. This makes an ideal luncheon dish. Another way is to add grated cheese to the mashed potato and place back in the shells, and heat through so that the cheese melts. Some hostesses garnish potatoes baked this way with a bit of white of egg beaten stiff and a spray of parsley.

Lemonade made from the juice of the lemon is one of the best and safest drinks for any person, whether in health or not. It is suitable for all stomach diseases, excellent in sickness, in cases of jaundice, liver complaint, inflammation of the bowels and fevers. It is a specific against worms and skin complaints. The lemon crushed may be used with sugar and water, and taken as a drink. Lemon juice is the best antiscorbutic remedy known. It not only cures the disease, but prevents it. Sailors make daily use of it for this purpose. We advise every one to rub their gums with lemon juice to keep them in a healthy condition. The hands and nails are also kept clean, white, soft and supple by the daily use of lemon instead of soap. It also prevents chilblains. Lemon is used in intermittent fevers, mixed with strong, hot, black coffee, without sugar. Neuralgia, it is said, may be cured by rubbing the parts affected with a cut lemon. It is valuable also to cure warts. It will remove dandruff by rubbing the roots of the hair with it. It will alleviate, and finally cure, coughs and colds, and heal diseased lungs, if taken hot on going to bed at night. Its uses are manifold, and the more we employ it internally the better we shall find ourselves.



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**FARMERS' CLUBS.****How to Keep the Boys on the Farm.**

By MRS. E. A. GAMMON at the Courtland Farmers' Club.

There has been a great tendency among our boys and girls to leave their country homes, seeking, in the cities, to make their fortunes or win fame. In too many cases these high hopes and ambitions have ended in disappointment and utter ruin. On the other hand, rural life has fewer temptations, purer pleasures, and far less competition.

This tendency of the rural population seems to be somewhat checked and a reflex action is now setting in. People are beginning to realize the vast opportunities there are in rural pursuits, and also the many great advantages there are in the peace and quiet far removed from the bustle and turmoil of a great city.

Once people thought that the slow-plodding boy who seemed dull and incompetent was the boy of whom to make a farmer. They are now beginning to realize as never before the fact that the properly managed ranch needs the most diversified knowledge, combined with good common sense and a good business head.

There are now so many branches of agricultural pursuits open to the specialist. And the specialist is sure soon to become in agricultural pursuits what he has in all others—the leading factor. Our boys will be compelled to be thoroughly trained in their line of work, and a "Jack of all trades" in farming, as in other walks of life, will be left behind.

There are so many branches opened to the specialist that the majority of boys will be able to choose something for which they have a special aptitude or liking.

What can be a more fascinating occupation than that of the horticulturist? Luther Burbank is an example of what can be done in one branch of horticulture, and the whole world is grateful.

There is the dairy business in all its departments, any one of which if done in a thoroughly scientific manner, is both interesting and profitable.

Then the botanist, the chemist, and the mechanic, beside innumerable others, can give full sway to their capabilities and interests.

One of the things which I believe to be chiefly instrumental in sending our boys away is the fact that we belittle our own occupation. We speak slightly of it. Can we wonder then if our boys have little respect for our calling? I do not think this true of any other occupation.

A merchant brings his son up in the expectation of entering into his business and ultimately becoming a partner. A lawyer's son follows in the footsteps of his father, a carpenter's son in his father's, and so on down the list. But a farmer's boy is brought up with the idea of becoming a doctor, a lawyer or other professional man and is a great disappointment to his parents if he prefers the life of his father.

One of the great factors in driving the boys and girls away from the coun-

try is its lack of pleasant home life. This is probably less true of the Sacramento river than of most places. Every idea seems to be hard work with no recreation, at least in the home. Then often—more often than otherwise—they are given no personal interest in their work, nor any incentive to become proficient.

All this might and should be changed. Give your boys an interest in their work by giving them something for their own. A horse or a cow, a pig or part interest in the poultry, will prove a valuable incentive, and as they grow older give wages, if not much at least something that will give a feeling of independence.

Not that a boy should be afraid of doing something for his father without pay. But, if rightly managed, and thus encouraged, he will naturally respect his father all the more and will be the more willing to do anything he can to help him. Then talk over your plans and business affairs with your boys. Get their opinions and then act on them if you can. If not, show them where they are impracticable, but never laugh or belittle their ideas.

Have plenty of good literature in your homes. Good papers, good magazines and good books, embracing every subject. Take some good farm papers and encourage your boys to read them as soon as old enough to understand even a small part.

They will naturally select those subjects in which they are most interested by reason of their daily tasks. From those they will gradually begin to read on other topics which are more to their turn of mind.

Then call attention to different articles which are especially interesting or good and encourage them to do likewise. Follow the same course with your magazine and book reading, as it is not only good mental discipline but strengthens the home feeling.

Teach them to notice the beauties of nature—the trees, grass and flowers—the sunsets and sunrises, and every beautiful scene. Interest them in the study of all nature around them and provide books as guides to aid them. Point out the beauties of your cattle, horses and poultry and cultivate an affection for all the animals of the farm.

Probably many of us need some such schooling as this, and often many pleasant and beautiful things escape our notice, until some one from the cities calls attention to them, and we realize for the first time how much we have, and wonder at our own lack of appreciation.

For instance, take the case of the old couple who tired of their pleasant country home and thought of selling it and buying a city home. They put the property in the hands of a real estate agent. The next issue of the newspaper had a glowing advertisement of their home, telling of its fine shade trees and the lovely stream of limpid water flowing through it, thereby making it an ideal home. The old man read it over to his wife in amazement, then exclaimed, "If this is the kind of place we have, it's too good to sell."

Beautify your homes, inside and out, and although they may be humble, with the co-operation of all everything may be neat and comfortable. Green grass and shade trees may be had by only a little time, money and exertion, but the attractiveness of the home is increased a hundred fold.

And then, mothers, fit up a good sized room with all the comforts you can afford. Bring out your books and magazines and games, and let your family use them. Don't lock the door and keep it for state company, but use it in the developing of your boys and girls—yes, and your husband and yourself.

Let them know what we are doing here in this club. Let them see that we think our occupation honorable and that thought and knowledge are required. Let them realize the important place the farming class occupies in the world. I heard a gentleman not long since quote one of our State Legislators, a member from San Francisco, as saying, "If it were not for the country members our State would lose its statehood." The welfare of our

nation, also, depends on its agricultural communities. From those communities most of our great statesmen, lawyers and doctors are produced.

I have thought a good deal since our last annual dinner of the opportunities we were losing of interesting our boys in the pursuits of their fathers. There were so many good things said that day it seemed to me such a pity our boys could not have heard them.

They may not become farmers, but they surely would become better men by hearing their fathers and the men in the community to whom they naturally look up speak with the earnestness and high ideals which their speeches and talks have shown.

Now, I have a suggestion to make which could also be discussed under the "Good of the Club."

Can we not once in a while give our boys and girls, too, a special invitation to attend our meetings? At which times try to have a programme which will be specially interesting to them.

You all remember the interest even the younger boys took in the programmes at our institutes.

In conclusion, I will leave this last and, I think, important thought for your consideration.

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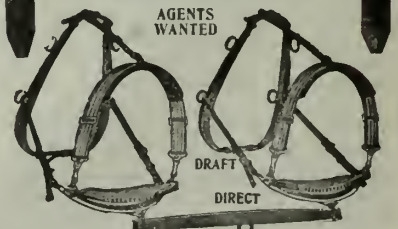
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**PLACE** olives in solution composed, 2 oz. Red Seal Lye to one gallon water. Repeat once or twice to remove bitterness. Rinse them thoroughly. Replace lye solution with fresh water. Change water twice daily until, judged by taste, lye is removed from olives.

Replace water with brine composed of 4 oz. salt to 1 gal. water, for two days. Put in brine of 6 oz. salt to gallon water for 7 days. Put in brine 10 oz. salt to gallon water for 14 days. Finally put the olives into brine of 15 oz. salt to gallon water.

Vessels used must be clean, odorless, tasteless. White or earthenware recommended. Wooden receptacles scalded in boiling water and soda will do. Use small casks, 5 to 10 gallons preferred. Vat or cask should have movable wooden grating 1 or 2 inches from bottom; a close fitting wooden cover and thick cloth over all. If olives are soft at first, use brine immediately after lye instead of fresh water. Remove any slime or scum.

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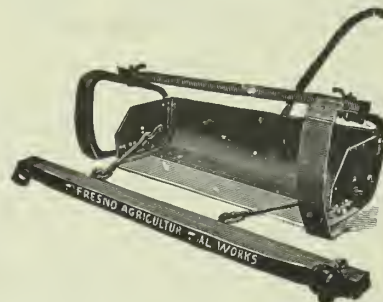
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## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, Dec. 31, 1901.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday.....	*—@—	—@—
Thursday.....	78½@79¼	82¼@83½
Friday.....	79 @78½	82½@82
Saturday.....	78½@77½	82¼@81¼
Monday.....	77 @78¼	80½@82¼
Tuesday.....	78¼@78	82¼@81¼

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday.....	*—@—	—@—
Thursday.....	45½@45¼	39½@39¼
Friday.....	41¼@41¼	39¼@38¾
Saturday.....	45½@44½	39½@38¾
Monday.....	41¼@41¼	38½@38¾
Tuesday.....	45½@45¼	39½@39¼

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec.	May.
Thursday.....	—@—	1 08½@1 09¼
Friday.....	—@—	1 08½@1 08¼
Saturday.....	—@—	1 08 @1 08¼
Monday.....	—@—	1 08½@1 07¾
Tuesday.....	—@—	1 08½@—
Wednesday.....	*—@—	—@—

\* Holiday.

## WHEAT.

This cereal has been lately moving outward in much larger quantities than early in the season. Clearances during December, as also during November, averaged about one cargo for each working day. January should make an equally good showing, there being enough ships now here to admit of dispatching one wheat cargo per day during the first month of the new year. Most of the deep-sea ships now in port are under charter to carry grain, nearly all of them having been taken prior arrival and at stiff rates, 32 shillings 6 pence per ton being about the minimum figure on the usual option of ordering off Cork or Queenstown to any United Kingdom port or to Havre, Antwerp or Dunkirk. Some of the charters are up to 37 shillings 6 pence. While wheat is moving outward in fairly liberal quantity, the price is not soaring upward, the high figures being paid for ships operating against the development of strength in the wheat market. There is good demand for wheat, however, at prevailing rates, and the market is not being seriously burdened with offerings, many holders refusing to let go at the figures now obtainable, anticipating better values before the close of the season. If affairs were properly adjusted, wheat would at this writing be higher and freights lower.

California Milling.....	1 07¼@1 10
Cal. No. 1 shipping, alongside.....	1 05 @1 08¼
Oregon Valley.....	1 05 @1 07¼
Washington Blue Stem.....	1 05 @1 10
Washington Club.....	1 02¼@1 05
Off qualities wheat.....	97¼@1 02¼

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	6s2¼d@6s3d	6s5¼d@6s8d
Freight rates.....	38—s	36¼@37¼s
Local market.....	98¼@1 01¼	1 03¼@1 06¼

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.09½@1.07¼.
December, 1902, delivery, \$—@—.
Wednesday, at regular noon session of Call Board, December, 1901, wheat sold at —@—; May, 1902, —@—.

## FLOUR.

The market is firm, with no likelihood of being any more favorable to buyers for some time to come than at present. Flour is now relatively cheaper than wheat, and prices of flour in this center are lower, all things considered, than at most of the outside points contributing to San Francisco supplies. Local stocks are not of heavy volume.

Superfine, lower grades.....	\$2 25@2 40
Superfine, good to choice.....	2 50@2 75
Country grades, extras.....	3 00@3 25
Choice and extra choice.....	3 25@3 50
Fancy brands, jobbing.....	3 50@3 65
Oregon, Bakers' extra.....	2 75@3 15
Washington, Bakers' extra.....	2 75@3 25

## BARLEY.

There have been no evidences of any very active trading in this cereal the past week, nor have there been any pronounced changes in quotable values. Shippers do not appear to be bidding more here for

export grades than a month ago, although prices on feed descriptions have advanced in the meantime. Exporters may be paying relatively higher figures in the interior than here, which is often the case, prices in this center being kept down to enable purchasing to advantage in the country. To buy freely here of brewing and export grades it would be necessary to pay stiffer prices than have been lately quoted by leading operators. Business in feed descriptions is of fair volume and mainly at full current figures.

Feed, No. 1 to choice.....	80 @ 82½
Feed, fair to good.....	77½@ 80
Brewing, No. 1 to choice.....	82½@ 87¼
Chevalier, No. 1 to choice.....	92¼@1 00
Chevalier, poor to fair.....	77½@ 85

## OATS.

There have been further sharp advances in prices for this cereal since last review, more particularly for white oats, largely due to heavy purchasing on Government account. While the last advance is most pronounced on White oats, all varieties are tending against buyers, with prospect of market continuing strong during the balance of the season.

White Oats, fancy feed.....	1 35 @1 40
White, good to choice.....	1 25 @1 35
White, poor to fair.....	1 15 @1 22¼
Gray, common to choice.....	1 25 @1 35
Milling.....	1 25 @1 35
Surprise, good to choice.....	1 35 @1 40
Black Russian.....	1 05 @1 27¼
Red.....	1 15 @1 37¼

## CORN.

Spot supplies and offerings continue of very moderate volume, are mostly domestic product, and include little which can be termed strictly choice. Market for desirable qualities is firm at the quotations, but inferior is not receiving much attention, and in some instances will not command wholesale custom at lowest figures quoted. White corn is now in better supply, as compared with the demand, than Large Yellow, and prices for the two kinds are at present at about the same level.

Large White, good to choice.....	1 35 @1 40
Large Yellow.....	1 35 @1 45
Small Yellow.....	1 45 @1 55

## RYE.

The advanced figures last quoted are being well maintained, offerings not being heavy, either spot or to arrive. The demand is not very active, otherwise still higher prices would be ruling.

Good to choice, new.....	80 @ 82½
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## BUCKWHEAT.

Market is quiet, but at same time presents a tolerably firm tone. Quotations are based on latest reported sales. No large quantities are obtainable, however, at these figures.

Good to choice.....	1 70 @1 75
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## BEANS.

The same quiet state of trade previously noted as existing in the bean market continues to be experienced, which is not unusual for this time of year. Values for most varieties are ruling very steady, it being the exception where any noteworthy or undue selling pressure is being exerted, especially on desirable qualities. Spot supplies are composed largely of Lady Washingtons, Bayos, Pinks and Limas. Pea beans are so scarce as to be hardly quotable.

Pea, fair to good, 100 lbs.....	3 25 @3 50
Small White, good to choice.....	2 85 @3 15
Lady Washington.....	2 75 @3 00
Pinks.....	1 85 @2 10
Bayos, good to choice.....	2 35 @2 50
Reds.....	2 50 @2 75
Red Kidney.....	3 50 @3 75
Limas, good to choice.....	4 40 @4 60
Black-eye Beans.....	3 40 @3 65
Garbanzos, large.....	2 00 @2 25
Garbanzos, small.....	1 25 @1 50

## DRIED PEAS.

There is no improvement to note in the market for Green or Blue Peas, the demand being slow. Market for Niles Peas is firm, however, with spot stocks of same light and in few hands.

Green Peas, California.....	1 50 @2 00
Niles Peas.....	1 75 @1 80

## WOOL.

Market would be active if wools of desirable quality were offering at current rates in sufficient quantity to admit of wholesale operations. Present offerings are mostly heavy and seedy wools, and these are likely to be cleaned up at an early date. The market shows a healthy tone. An active demand at good figures is anticipated for the coming spring clip, especially if the wools mature in fine condition.

Southern, defective, 7 mos.....	7 @ 8
Oregon Valley, fine.....	14 @15
Oregon Valley, coarse to medium.....	12 @13
Eastern Oregon, choice.....	11 @13
Eastern Oregon, fair to good.....	9 @10
Nevada, as to condition.....	10 @12

## FALL.

Humboldt and Mendocino.....	11 @12
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Northern Mountain, free.....	9 @10
Northern Mountain defective.....	8 @ 9
Middle Counties.....	8 @10
San Joaquin and Plains.....	6¼@ 8¼
San Joaquin Lambs.....	7¼@ 9

## HOPS.

There are no large quantities now remaining in first hands on this coast, but bids of wholesale operators show no improvement on the rather low figures they have been naming for some time past, viz., 8¼@10c for good to choice, the higher quotations representing little other than the views of holders or asking rates. Saturday's China steamer took 21,122 pounds for the East Indies. A New York authority, under recent date, states the situation as follows: "There is very great contrast between the volume of business so far this season and what was accomplished up to this time last year. Receipts show a shortage of 49,319 bales, and we are 32,833 bales behind in the exports. Compared with two years ago the difference is only slight. Upward of 3300 bales of the past week's receipts were in transit for export, all from the Pacific coast, with the exception of one lot of 597 bales which came from this State. The situation here has not changed in any important feature. Brewers have been taking a moderate quantity of stock, and with the hops that have gone abroad no considerable additions have been made to local holdings. Some dealers have taken on more stock against future needs, but the outlook for trade has not been sufficiently bright to encourage large buying. On such business as has been accomplished former prices have ruled and the feeling seems to be steady, except possibly on the inferior qualities of 1901 hops, and all sorts of the older growths. A fair movement is still reported in the interior of this State at varying prices, say from 9c to 12¼c, and on the Pacific coast pretty good business is reported at 7@11c, with the exception of a few very choice lots which have sold slightly higher.

Good to choice, 1901 crop.....	9 @12
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## HAY AND STRAW.

Under decreased arrivals, the hay market has presented a slightly improved tone, the weather also aiding in the same direction, but quotable values were without pronounced change. Without liberal rains in the next few weeks, stiffer prices for hay are likely to be established. Should the interior be favored with timely moisture, the hay market may rule easier, but no special decline in quotable values is looked for.

Wheat, good to choice.....	9 00@12 50
Wheat and Oat.....	9 00@11 50
Oat.....	7 00@10 00
Barley and Oat.....	6 50@8 50
Barley.....	6 50@8 00
Alfalfa.....	9 00@10 00
Clover.....	6 00@8 00
Stock.....	6 00@7 00
Compressed.....	9 00@12 50
Straw, ½ bale.....	35@47½

## MILLSTUFFS.

Bran has been ruling against buyers, with quotations again advanced, owing to slim receipts and light spot stocks. Values for middlings and Shorts also tended upward, but call for these was not brisk. Rolled Barley and Milled Corn were held at about same figures as last quoted.

Bran, ½ ton.....	16 50@17 00
Middlings.....	18 00@20 00
Shorts, Oregon.....	16 50@17 50
Barley, Rolled.....	17 50@18 00
Cornmeal.....	31 00@32 00
Cracked Corn.....	30 00@31 00

## SEEDS.

Alfalfa Seed is beginning to arrive, mainly from Utah, and jobbing quotations are appended herewith for both the imported and the home article, but the season's demand for seeding has hardly begun. The market for Alfalfa during the next few months will be governed much by the weather, but a more than ordinarily good demand is looked for this winter, especially if the season proves at all favorable for seeding. Mustard Seed is ruling quiet and steady, with stocks light.

	Per ctn.
Alfalfa, Cal.....	7 00@7 50
Alfalfa, Utah.....	8 25@8 50
Flax.....	2 40@2 60
Mustard, Yellow.....	3 25@3 50
Mustard, Trieste.....	3 00@3 15
	Per lb.
Canary.....	3¼@3½
Rape.....	1¼@2¼
Hemp.....	3¼@3½

## BAGS AND BAGGING.

Calcutta Grain Bags for next season have commenced floating this way, the first cargo having started on Dec. 8th. Prospects are that importations will be sufficient to satisfy the demand. Asking prices for next July deliveries are lower than paid for spot stock last summer.

Calcutta Grain Bags, buyer June-July.....	6 @ 6¼
Calcutta Grain Bags, spot.....	6¼@—
San Francisco Grain Bags, 22x36, spot.....	—@—
Wool Sacks, 4 lbs.....	35 @36

Wool Sacks, 3¼ lbs.....	32 @33
Fleece Twine.....	8¼@—
Gunnies.....	—@—
Bean Bags.....	5¼@ 5½
Fruit Sacks, cotton, three sizes.....	5¼, 6, 6½
Fruit Sacks, Jute.....	7 @ 7½

## HIDES, PELTS AND TALLOW.

Values quoted on Hides are being well maintained, offerings in most instances meeting with prompt sale. Pelts are being accommodated with custom at unchanged figures about as rapidly as received. Tallow is in good request at previously quoted prices.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @—	9¼@—
Medium Steers, 48 to 56 lbs.....	10 @—	8¼@—
Light Steers, under 48 lbs.....	9 @—	8 @—
Heavy Cow Hides, over 50 lbs.....	9 @9¼	8¼@—
Light Cow Hides, under 50 lbs.....	9 @—	8 @—
Stags.....	6¼@7	—@—
Wet Salted Kip.....	9 @9½	8 @—
Wet Salted Veal.....	9 @9½	8 @—
Wet Salted Calf.....	10 @—	9 @—
Dry Hides.....	16 @16½	14 @—
Dry Kip and Veal, 11 to 16 lbs.....	15¼@—	13 @—
Dry Calf, under 4 lbs.....	17 @—	15 @—
Salted Horse Hides, large.....	2 75 @—	—@—
Salted Horse Hides, medium.....	2 25 @—	—@—
Salted Horse Hides, small.....	1 00 @—	—@—
Dry Horse Hides, large.....	1 75 @—	—@—
Dry Horse Hides, small.....	1 25 @—	—@—
Dry Colts' Hides.....	50 @—	—@—
Pelts, long wool, ½ skin.....	90 @100	—@—
Pelts, medium, ½ skin.....	60 @70	—@—
Pelts, short wool, ½ skin.....	30 @40	—@—
Pelts, shearing, ½ skin.....	15 @30	—@—
Deer Skins, best summer.....	35 @—	—@—
Deer Skins, good medium.....	—@30	—@—
Deer Skins, thin winter.....	—@20	—@—
Elk Hides.....	10 @12	—@—
Tallow, good quality.....	5 @5¼	—@—
Tallow, No. 2.....	4 @4½	—@—
Goat Skins, perfect.....	30 @37½	—@—
Goat Skins, small.....	10 @20	—@—
Kid Skins.....	5 @10	—@—

## HONEY.

Business doing is not brisk, but is at generally unchanged values, the market being moderately firm at current rates, particularly for choice to select. Stocks in this center are of quite moderate proportions, and it is the exception where special selling pressure is exerted or less than full current figures prove acceptable to holders.

Extracted, White Liquid.....	5¼@ 6
Extracted, Light Amber.....	4¼@ 5
Extracted, Amber.....	4 @—
White Comb, 1 lb frames.....	11 @12¼
Amber Comb.....	8 @10
Dark Comb.....	6 @7

## BEESWAX.

Not much coming forward from any quarter and very little in stock. Previous quotations remain in force and are being well maintained.

Good to choice, light, ½ lb.....	25 @28
Dark.....	24 @25

## LIVE STOCK AND MEATS.

Beef is not being offered freely and market shows decided firmness, with no prospects of being materially lower for at least several months to come. Mutton is in fair supply and in good request, values ruling steady. Veal is arriving very sparingly, and Lamb is almost out of date. Hogs are in light receipt, just barely enough to satisfy the immediate demand for fresh pork.

Beef, first quality, dressed, net ½ lb.....	7¼@ 8
Beef, second quality.....	7¼@—
Beef, third quality.....	6¼@ 7
Mutton—ewes, 7@7¼c; wethers.....	7¼@ 8
Hogs, hard grain fed, 150 to 250 lbs.....	5¼@ 6
Hogs, small, fat.....	5¼@ 6
Hogs, large, hard, over 250 lbs.....	5¼@ 5½
Hogs, country dressed.....	6¼@ 7
Veal, small, ½ lb.....	8 @9¼
Veal, large, ½ lb.....	8 @8¼
Lamb, spring, ½ lb.....	9 @9¼

## POULTRY.

The inquiry for Turkeys was less active than for preceding week, which was to have been expected. Arrivals were also lighter, but prices failed to keep up to previous week's figures. Some of the retailers carried over considerable quantities of high priced Christmas Turkeys from Christmas week, which left them in anything but a happy frame of mind for New Year's. Market for other poultry was without special change. Choice young fowls and fat Hens were in good demand.

Turkeys, dressed, choice.....	15 @17
Turkeys, alive, Hens, ½ lb.....	13 @14
Turkeys, alive, Gobblers, ½ lb.....	13 @14
Hens, California, ½ dozen.....	4 50 @5 00
Roosters, old.....	4 50 @5 00
Roosters, young (full-grown).....	4 50 @5 00
Fryers.....	4 00 @4 50
Broilers, large.....	4 00 @5 00
Broilers, small.....	3 00 @3 50
Ducks, old, ½ dozen.....	4 50 @5 00
Ducks, young, ½ dozen.....	6 00 @7 00
Geese, pair.....	1 50 @1 75
Goslings, pair.....	1 75 @2 00
Pigeons, old, ½ dozen.....	1 25 @1 50
Pigeons, young.....	1 75 @2 00



## BUTTER.

Arrivals of fresh butter are of quite moderate proportions, the Humboldt season being practically ended and the output of the dairy section of the bay counties, as also of the Southern part of the State, having not yet this season attained large volume. Offerings of all fresh butter are clearing up fairly well, but more particularly choice to select, with market for latter firm at prevailing values.

Creamery, extras, # lb.	25	@
Creamery, firsts.	21	@
Creamery, seconds.	19	@
Dairy, select.	22	@
Dairy, firsts.	18	@
Dairy, seconds.	16	@
Mixed store.	13	@14
Creamery in tubs.	19	@21
Pickled Roll, # lb.	17	@19
Firkin, California, choice to select	17	@19
Firkin, common to fair.	16	@17

## CHEESE.

The market is well stocked with domestic, other than strictly select mild new of high grade, and for the ordinary run of offerings there is a lack of firmness, prices being shaded to buyers in numerous instances rather than miss sales. Fancy new going to special trade commands in a small way higher rates than are quotable. Eastern cheese is ruling steady here and at primary points.

California, fancy flat, new.	11 1/2	@12
California, good to choice.	10 1/2	@11 1/2
California, fair to good.	10	@10 1/2
California, "Young Americas".	12	@

## EGGS.

Prices for eggs have kept close to figures of preceding week, but the market could not be termed especially firm, as both sellers and buyers were anxious to keep stocks down to small compass, having no faith in current values being long maintained. Cold storage eggs are still being offered in considerable quantity, especially for this late date, and market for this stock is weak.

California, select, large, white and fresh.	34	@
California, select, irregular color & size.	30	@32
California, good to choice store.	24	@27
California, common to fair store.	20	@
Eastern, good to choice.	20	@
Cold Storage.	17	@20

## VEGETABLES.

The supply of fresh vegetables from the southern section, although not very heavy, was larger than preceding week, and market was easier for most descriptions. Prices for choice fresh stock did not decline, however, to what could be termed low levels. Onions were held at much the same range as last quoted, with few California now arriving, but moderate receipts from Oregon.

Beans, String, # lb.	6	@ 10
Beans, Wax, # lb.	—	@ —
Cabbage, choice garden, # 100 lbs.	50	@
Cauliflower, # dozen	40	@ 50
Cucumbers, Bay, # large box.	40	@ 65
Egg Plant, Los Angeles, # lb.	15	@ 17 1/2
Garlic, # lb.	2	@ 2 1/2
Mushrooms, # lb.	—	@ —
Onions, Yellow Danver, # cental.	1 50	@2 00
Peas, Sweet garden, # lb.	6	@ 8
Peppers, Green Chile, # sack.	35	@ 60
Peppers, Bell, # box.	50	@ 70
Rhubarb, # lb.	5	@ 7
Squash, Marrowfat, # ton.	5 00	@8 00
Summer Squash, # box.	1 25	@1 75
Tomatoes, Los Angeles, # box.	1 00	@1 50

## POTATOES.

The same quiet condition prevails in the potato market as for several weeks past. There is no shipping trade at present worth mentioning and the local demand is only moderate. Spot stocks are mostly in second hands and are not being crowded to sale, holders expecting a better market a little later on. Sweet potatoes were in fair receipt and sold at a wider range than last quoted, owing to greater difference in quality of offerings.

Burbanks, Salinas, # 100 lbs.	1 30	@1 60
River Burbanks in sacks, # cental.	90	@ 1 10
Petaluma and Tomales Burbanks.	1 10	@1 30
Oregon Burbanks.	1 25	@1 50
River Reds.	1 40	@1 60
Sweets, Merced, # cental.	75	@1 00

## The Fruit Market.

## FRESH FRUITS.

In the market for fresh fruits, other than citrus, Apples are now the chief feature. Choice to fancy Apples are in light stock and in request at good prices. Supplies of the lower grades are by no means heavy, but inquiry for this sort is limited to small compass, as are also the views of buyers as to values. Pears are offering in moderate quantity, mostly out of cold storage, with market very firm for choice to select, suitable for table display. Persimmons are still to be seen, but the call for this fruit is light.

Apples, fancy, # 4-tier box.	1 50	@ 2 00
Apples, good to choice, # 50-lb. box.	1 00	@ 1 50
Apples, common to fair, # 50-lb. box.	40	@ 75
Apples, Lady, # box.	50	@ 1 25
Pears, Winter Nelis, # 40-lb. box.	1 50	@ 2 50

Pears, other kinds, # box.	50	@ 1 25
Persimmons, # box.	30	@ 65

## DRIED FRUITS.

The market for cured and evaporated fruits shows a generally healthy tone, especially for all good to choice stock; a much better condition as a whole than most parties interested thought possible, or anticipated for this date, sixty days ago. A clean-up of all kinds, not even excepting Prunes, is among the possibilities of the near future. The Prune market is firm at current rates, with probably not to exceed 150 cars of new crop now unplaced, and prospects good for higher prices before the season closes. To see new Santa Clara 4's commanding 4@4 1/2 inside of sixty days would not be surprising from present outlook. It is estimated that of old Prunes there are from 500 to 600 cars still unmarketed, but all of these that are merchantable are likely to soon find their way into consuming channels at the low prices lately current, or possibly slightly better figures on the clean-up, in sympathy with the improved condition of the market for new. Apples, Apricots and Peaches are all in light stock and higher figures than lately quotable are being asked for desirable qualities. Quotable values for Pears and Plums remain without appreciable change, but there are no heavy stocks of good to choice of either variety, and holders are displaying no uneasiness about securing custom.

## EVAPORATED OR BLEACHED.

Apricots, Royal, prime.	8	@ 8 1/2
Apricots, Royal, choice, in sacks, # lb.	8 1/2	@ 9
Apricots, Moorpark.	10	@12
Apples, in 50-lb boxes, rings, pressed, fancy.	8	@ 8 1/2
Apples, 50-lb boxes, rings, pressed, good to choice.	6 1/2	@ 7 1/2
Figs, pressed.	—	@ —
Nectarines, # lb.	5	@ 6
Peaches, unpeeled, fancy.	7 1/2	@ 8
Peaches, unpeeled, choice.	6	@ 7
Peaches, peeled, in boxes.	12	@14
Pears, halves, choice to fancy.	6 1/2	@ 8 1/2
Plums, Red and Black, pitted.	5 1/2	@ 6 1/2
Plums, White and Yellow.	5 1/2	@ 6 1/2
Prunes, 4 sizes, in bags, 3@3 1/2; 50-60s, 4@4 1/2; 60-70s, 3 1/2@4; 70-80s, 3 1/4@3 1/2; 80-90s, 2 1/2@3; 120s and less, 2@2 1/2; these figures for 1901 crop.	—	—

## COMMON SUN-DRIED.

Apricots.	7	@ 7 1/2
Apples, sliced.	3	@ 5
Apples, quartered.	3 1/2	@ 4 1/2
Figs, Black.	—	@ —
Figs, White.	—	@ —
Peaches, unpeeled.	4 1/2	@ 6
Pears, prime halves.	4 1/2	@ 5
Plums, unpitted, # lb.	1 1/2	@ 2 1/2

## RAISINS.

Stocks are exceedingly light and market is firm throughout. Layers are higher and not many are obtainable at the advanced figures quoted. Prices for loose and seeded raisins are likely to be marked upward any day. Indications are that stocks other than inferior will be soon wholly exhausted.

Following are the prices for new crop, as fixed by the Fresno Association:

Loose Muscatels—	Per lb.
4-crown.	5 1/2
3-crown.	5 1/4
2-crown.	4 1/2
Seedless Muscatels.	5
Seedless Sultanias.	5 1/2
Thompson's Seedless.	6
Seeded—	
3-crown, 1-lb. carton.	7
2-crown, 1-lb. carton.	6 1/2
London Layers, 20-lb. boxes—	
2-crown.	—
3-crown.	1 50

## CITRUS FRUITS.

Auction sales were resumed Monday, but figures realized were not satisfactory. Four carloads of Navels were disposed of, fancy going at \$1.40@\$1.60 per box, and standards at 65c@\$1. A carload of lemons went at \$1.55 for fancy, 85c@\$1.15 for choice, and 65c for standard. Quotations below are based on prices current in the jobbing market. Grape fruit was in increased supply and market easier. Limes were held at much the same rates as last quoted.

Oranges—Navels, # box.	1 00	@2 00
Seedlings, # box.	50	@1 00
Tangerines, # 1/4 box.	75	@1 00
Lemons—California, select, # box.	2 50	@3 00
California, good to choice.	1 50	@2 00
California, common to fair.	75	@1 25
Grape Fruit, # box.	2 00	@2 75
Limes—Mexican, # box.	4 00	@4 50

## NUTS.

Almonds and walnuts are now practically out of first hands and not many of either are remaining in stocks of jobbers. There is not much inquiry, however, at present, as is to be expected after the mid-winter holiday trade is ended. Quotable values continue nominally as before. Peanuts are moving in a moderate way at unchanged values.

California Almonds, shelled.	15	@18
California Almonds, paper shell, # lb.	10	@12
California Almonds, soft shell.	7	@ 9
California Almonds, hard shell.	5	@ 6
Cal. White Walnuts, No. 1 soft shell.	8 1/2	@ 9 1/2
Cal. White Walnuts, No. 2 soft shell.	6 1/2	@ 7 1/2
Cal. White Walnuts, No. 1 hard shell.	7 1/2	@ 8 1/2

Cal. White Walnuts, No. 2 hard shell.	6	@ 7
Peanuts, California, fair to prime.	4 1/2	@ 5 1/2
Peanuts, Eastern, hand-picked.	5 1/2	@ 6
Pine Nuts.	5	@ 6

## WINE.

No business of consequence is reported in wines of last vintage. The market shows firmness, however, with light offerings and no uneasiness manifested on the part of holders. Dry wines of 1901 are quotable nominally at 20@25c. per gallon, and it is believed the bulk of sales will be closer to latter figure than to the lower quotation above named. This will certainly be the case if values for wine are to be in keeping with prices paid the past season for grapes. Exports by sea from San Francisco in November were 115,190 gallons and 2658 cases, having a total value of \$54,320. In November, 1900, 377,080 gallons and 598 cases were shipped, the total value being \$114,440.

## Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.	126,823	3,319,448
Wheat, centals.	327,780	4,593,102
Barley, centals.	133,003	4,278,137
Oats, centals.	37,180	639,734
Corn, centals.	5,320	50,173
Rye, centals.	1,300	102,475
Beans, sacks.	5,262	527,905
Potatoes, sacks.	34,598	816,162
Onions, sacks.	2,577	143,215
Hay, tons.	2,190	81,735
Wool, bales.	460	41,280
Hops, bales.	259	6,736

## EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.	13,140	2,363,402
Wheat, centals.	372,282	1,144,476
Barley, centals.	99,509	3,306,191
Oats, centals.	—	2,120
Corn, centals.	—	8,374
Beans, sacks.	895	18,883
Hay, bales.	—	5,372
Wool, pounds.	—	522,721
Hops, pounds.	26,296	407,073
Honey, cases.	7	5,441
Potatoes, pack's.	228	25,011

## California Dried Fruit at New York.

NEW YORK, Dec. 30.—Evaporated apples, common, 6@8 1/2; prime wire tray, 9@9 1/2; choice, 9 1/2@10; fancy, 10 1/2@11. California Dried Fruits.—Fair movement in prunes. Other fruits quiet. Prices without quotable change.

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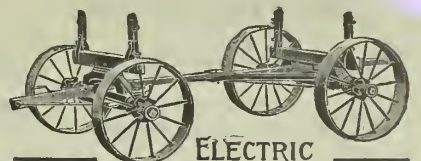
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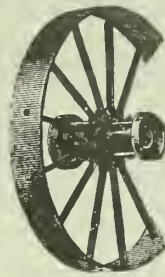
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## THE IRRIGATOR.

### Water Made Dams.

In the PACIFIC RURAL PRESS of June 1, 1901, we gave an illustration and description of a dam made by water power in San Bernardino county. It is interesting to announce that the whole subject of water made dams is to be investigated and reported upon by the Division of Hydrography of the U. S. Geological Survey, and a preliminary statement by George B. Hollister of Rutherford, N. J., is just received. He says that some of the old-time operations of the miners for placer gold and the use of the hydraulic "giant" have suggested an ingenious method of constructing dams for reservoirs in the West. The hydraulic giant was found to be a most effective and powerful agent in removing even compact bodies of earthen material. A stream of water brought from an elevation under great pressure and directed against the face of a hill in which gold was supposed to be, tore its way into the mass with tremendous force, cutting out large amounts of the material and washing it away, the waste water assorting the fine from the coarse particles. The sand and gravel thus washed away was carefully examined for the precious metal.

Of recent years hydraulic power has been employed to almost reverse this process. Engineers, appreciating the great transporting and assorting power of water used in this way have availed themselves of it to build up instead of tear down the land; and by carefully guiding the material loosened by the force of the water they have been able to accumulate and arrange it almost at will. The process has been found especially useful in the construction of dams. For example, if an earth dam is to be built, the material rolled along by the water is carried in flumes to the selected spot. On leaving the flume small boulders and coarse gravel are at once deposited. The sand flows on farther, and the fine mud is carried in suspension for considerable distances. It is thus possible to deposit the gravel on the outer slope of the dam and the finer material in the center, thus making a central impervious clay wall and heavy coating of coarser gravel on the upper and lower faces of the dam. The material being deposited under water is thoroughly compacted, and there is less danger of settlement or of porous layers being formed than in the case of dirt placed by carts or scrapers. A number of dams, notably in southern California and in Texas, have been built with extraordinary speed and small expense in this way, and even high railroad embankments have been constructed in like manner.

This method of construction of dams is being made the subject of study by the Division of Hydrography of the U. S. Geological Survey in connection with investigations as to the feasibility of reclaiming the arid lands of the West.

### Topographic Maps of California.

Six topographic maps of different sections of California have recently been issued by the U. S. Geological Survey; they are: The Redlands Quadrangle of the county in the vicinity of Redlands, showing a portion of the mountain country to the north, including part of the San Bernardino Forest Reserve, the various canals used in connection with the irrigation of the Redlands district also appearing; the San Jose Quadrangle, showing the city and vicinity of San Jose; the San Luis Rey Quadrangle in the southwestern part of the State, adjoining the coast and in the neighborhood of Escondido, the San Luis Rey valley, much of which is entirely dry during the summer, being clearly shown; the San Jacinto Quadrangle of part of the San Jacinto mountains and forest reserve and the city of the same name, the irrigating canals are here also shown; the Carquinez Quadrangle of the land lying on each side of Carquinez strait to the north of Oakland, and the San Mateo Quadrangle from San Francisco 15 miles south including the city of San Mateo,

and showing the coast lines of the Pacific ocean and San Francisco bay. All of the maps are new except the San Mateo and San Jose sheets, which are reprints. They show all the towns and villages included within their limits, all rivers, roads and trails, and by the use of contour lines clearly indicate the topography or relief of the country. They may be had on application to the Director of the Geological Survey, Washington, D. C., at the usual rate of 5 cents each.

### Man's Faithful Friend.

Some years ago, says the Nashville American, Senator Vest of Missouri attended court in a country town, and while waiting for the trial of a case in which he was interested, was asked by the attorney of a dog case to help him. Evidence was shown that the defendant had shot the dog in malice, while other evidence was introduced to show that the dog attacked the defendant. Senator Vest took no part in the trial, but upon being urged to speak, carefully scanned the face of each juror for a moment, and paid this eloquent tribute to our noble friend:

"Gentlemen of the jury: The best friend a man has in the world may turn against him and become his enemy. His son or daughter that he has reared with loving care may prove ungrateful. Those who are nearest and dearest to us, those whom we trust with our happiness and our good name, may become traitors to their faith. The money that a man has he may lose. It flies away from him, perhaps when he needs it most. A man's reputation may be sacrificed in a moment of ill-considered action. The people who are prone to fall on their knees to do us honor when success is with us may be the first to throw the stone of malice when failure settles its cloud upon our heads. The one absolutely unselfish friend that a man can have in this selfish world, the one that never deserts him, the one that never proves ungrateful or treacherous, is his dog. A man's dog stands by him in prosperity and in poverty, in health and in sickness. He will sleep on the cold ground, where the wintry winds blow and the snow drives fiercely, if only he may be near his master's side. He will kiss the hand that has no food to offer; he will lick the wounds and sores that come in encounter with the roughness of the world. He guards the sleep of his pauper master as if he were a prince. When all other friends desert, he remains. When riches take wing and reputation falls to pieces he is as constant in his love as the sun in its journeys through the heavens. If fortune drives the master forth an outcast in the world, friendless and homeless, the faithful dog asks no higher privilege than that of accompanying him, to guard against danger, to fight against his enemies. And when the last scene of all comes, and death takes the master in his embrace, and his body is laid away in the cold ground, no matter if all other friends pursue their way, there by the graveside will the noble dog be found, his head between his paws, his eyes sad, but open in alert watchfulness, faithful and true even in death."

Then Vest sat down. He had spoken in a low voice, without a gesture. When he finished the judge and jury were wiping their eyes. The jury filed out, but soon entered with a verdict in favor of the plaintiff for \$500. He had sued for \$200.

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## CONTENTS.

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XIII. Cultivation.	XXXIII. Berries and Currants.
XIV. Fertilizers for Fruit Trees and Vines.	XXXIV. Almond, Walnut, Chestnut, Peanut, Etc.
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XVI. The Apple.	XXXVI. Injurious Insects.
XVII. The Apricot.	XXXVII. Diseases of Trees and Vines.
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## Patrons of Husbandry.

### Tulare Grange.

This Grange was duly opened at its hall on the 21st. After reading and approval of the minutes two new members were elected to receive the degrees.

A well-written paper was then read by Sister Slaughter on "What influence is exerted by the rightly-conducted farm home upon the character and success in life of boys and girls reared in those homes?" The paper was well received and approved of; the general opinion expressed being that the farm home is the freest and happiest, and tends to make of the boys and girls raised therein, typical, upright, honest, sober, industrious, manly men and womanly women.

The subject, "The value of farm accounts," laid over from last meeting was considered, nearly all if not every member present participating in the discussion. It was voted that a system of farm accounts, kept by single entry, would be of great advantage on every farm. It would determine what the income from each branch of the farm is, what pays and what, if any, does not pay. It will lead to more systematic methods on the farm, it will be instructive to the whole family and be a valuable reference at all times. The consideration of the subject will be continued at next meeting when papers will be read by Brother Eckels and Sister Swanson on, "To what extent should the farmer keep a cash account of each crop grown and each kind of stock grown upon the farm?"

The subject of life and fire insurance was brought up and created much interest. The opinion expressed was favorable to life insurance in responsible companies, and every young couple commencing life should have such an amount of insurance on their lives as their incomes would justify. The subject of shade trees on the public roads was taken up. It was voted they are very desirable, should be carefully preserved in our hot climate, add to the attractions of our roads and our county and to the value of the lands adjacent in the country, as much so as to our city streets and lots. A committee of three was appointed to interview Capt. Thomas H. Thompson and the directors of the company cutting wood on the Kelley tract and request that the trees on the roads on the east and south sides be not cut down. Those of the directors seen are in favor of the request.

The question box was opened, the first question was: "In changing grown trees from one variety to another should it be done by budding or grafting?" The general opinion was, budding is preferable.

The subject of the decay of bearing fruit trees where oak trees had previously grown was brought up and discussed without satisfactory conclusions. It seems that where oak trees are replaced by fruit trees, all that can be got at of the oak roots taken out, the hole filled with fresh soil and a fruit tree set there, it will grow well for several years then the roots begin to die, the lowest first spreading to those nearest the surface, until all our dead. In parts of the same field where there were no trees the fruit trees are not so affected.

Senator George C. Perkins having sent the Grange ten copies of the Year Book for 1900, they were distributed among the members present and a resolution passed thanking him for them. Senator Bard had been written to also, but, so far, he has made no reply.

A resolution was passed limiting discussion of each question-box subject to five minutes.

Installation of officers will take place in the forenoon next meeting, conferring degrees in the afternoon. J. T.

### Grange Elections.

MAGNOLIA GRANGE, No. 261.—M., C. D. Bilderback; O., F. D. Rollins; L., W. C. Cunningham; S., Wm. Higgins; A. S., B. B. Nickerson; C., Mrs. Rebert Elder; T., D. Bilderback; Sec.,

Gertrude Higgins; G. K., E. E. Higgins; Ceres, Mrs. D. Bilderback; P., Mrs. C. D. Bilderback; F., Mrs. F. D. Rollins; L. A. S., Mrs. B. B. Nickerson; Trustee, E. E. Higgins. Installation Jan. 11, 1902.

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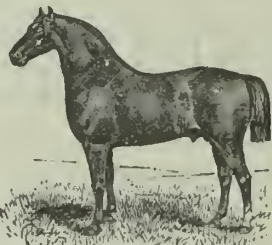
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Watch this column for further particulars.

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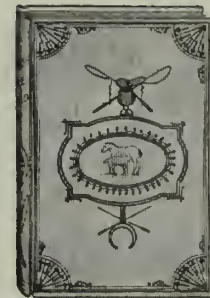
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## THE DAIRY.

## Creamery Operators' Convention.

According to announcement in the PACIFIC RURAL PRESS this assembly of important people was held in this city last week.

On the morning of the first day the delegates visited the dairy school and Agricultural Experiment Station at Berkeley. During the afternoon the annual address of the president, Henry F. Lyon of Alameda, was given. In it he referred to the rapid growth of the association, which in less than twelve months had expanded from a membership of thirty to over 100, with applications almost daily. He dwelt upon the necessity of living up to both the letter and spirit of the object of the association—that of developing the dairying interests of California, which, he said, amounted to over \$15,000,000 annually. Committees were appointed as follows:

Resolutions—Leroy Anderson, H. D. Glasier, Thomas Hodge.

Auditing—E. N. Bell, C. F. Andrews, A. C. Grossman.

Butter Contest—W. M. Turner, Geo. E. Peoples, T. G. King.

The remainder of the session was taken up in hearing and discussing the following addresses: "Scientific Education of the Creamery Operator," by Professor Leroy Anderson; "How Can the Creamery Operator Aid the Merchant?" by Thomas Hodge of San Francisco, and "Qualifications of the Creamery Operator," by H. P. Carpenter of Los Banos.

Dr. Archibald A. Ward of the University of California delivered an interesting address upon "Bacteriology as Applied to Creamery Work," during the second day's session. Other subjects discussed during the day were the care and repair of separators, cleanliness in the creamery, butter scoring, butter contests as educators, convenience in the creamery construction and equipment, and practical self-education of creamery operators.

A number of resolutions were adopted, the most important being the following:

Favoring the passage of such laws by the State Legislature to give the State Dairy Bureau the authority and funds to carry on the inspection of dairies and creameries.

Urging the next Legislature to make a sufficient special appropriation to the University of California to enable it to erect, equip and maintain a dairy school of such dimensions and dignity as the needs and importance of the dairy industry in the State demand, and provide for a farm of sufficient size and convenience to make possible the best instruction in the care and handling of all kinds of farm animals.

Urging the passage in Congress of the Grout bill, with substitute House resolution bill No. 1, regulating the sale of oleomargarine.

The election of officers practically wound up the business of the convention. Those elected were: President, H. F. Lyon of Alameda; vice-president, E. H. H. Zimmerman of Watsonville; district vice-presidents, George Knox of Sacramento, J. H. Severin of Modesto, J. A. Howe of Compton and H. A. Christenson of Eureka.

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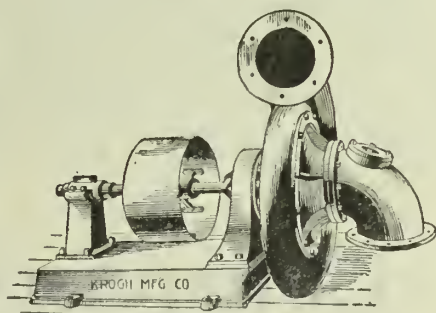
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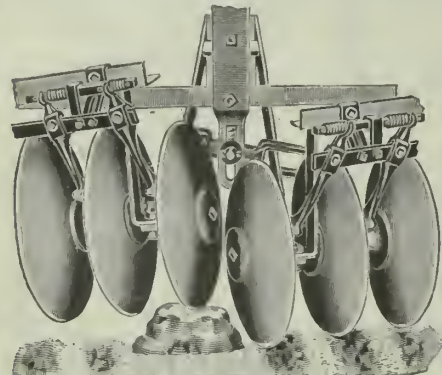
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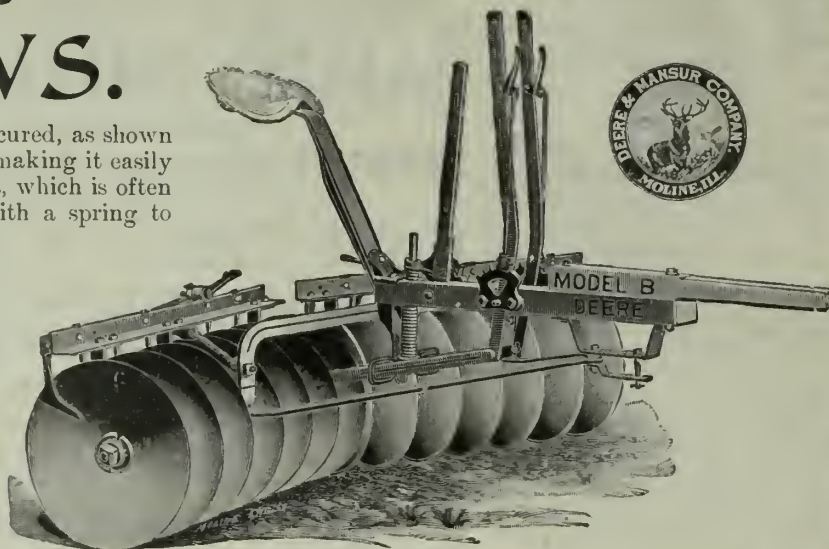


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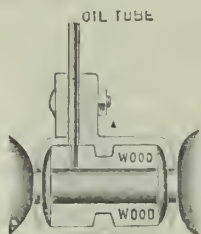
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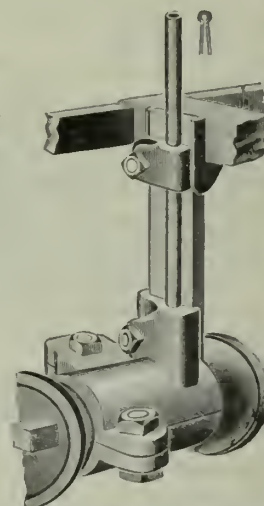
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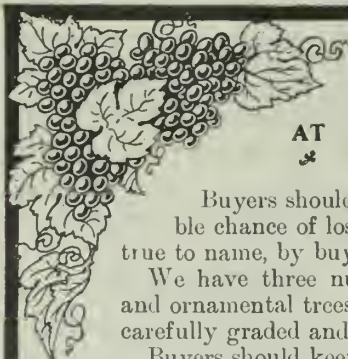
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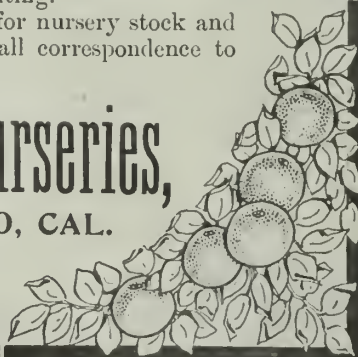
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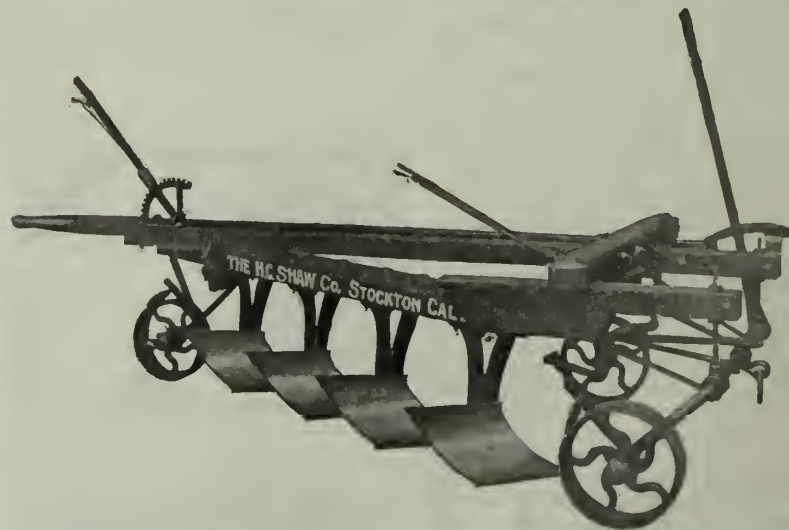
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# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 2.

SAN FRANCISCO, SATURDAY, JANUARY 11, 1902.

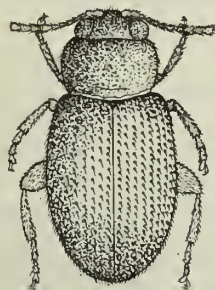
THIRTY-FIRST YEAR.  
Office, 330 Market St.

### Other Potato Troubles.

Even if the grower circumvents the moth which was discussed in our last issue, the potato grower has other things to do to protect his crop from encroachment. One of the very greatest evils is the blight, which has long been a serious evil in some regions and with some varieties. The grower should always experiment on a small scale with the new varieties offered by originators, who are working for new and vigorous blood, and determine for himself whether some of these new varieties are not better than the old. Aside from the effort for resistant varieties, however, the grower must protect his crop in many parts of the State by using new soil each year, and by beginning early in the season with spraying the young plants with Bordeaux mixture. If this is done, he may often get sound tubers, although there may be much blight in his neighborhood.

But there are other pests of the potato which must be looked out for and timely treatment made. We refer at this time to two which are included in the University Bulletin by Mr. W. T. Clark, in connection with the moth which was discussed last week. The diseased leaf shown on this page will be quickly recognized, for its author is unfortunately quite abundant, and yet may be looked for in vain unless one has sharp and quick eyes. The perforations in the leaf are made by a minute beetle whose enlarged portrait also appears. Its true size is shown in the minute insect which appears be-

low and to the right of the enlarged picture. It is obviously large enough to see plainly and could be easily discovered if it would only keep still to be looked at. This it will not do and one may look long at the perforated leaf after he has touched it without seeing anything but the distressed tissue. The insect is a flea beetle, so called because it has jumping powers and is quite as alert to use them as is the flea itself. As soon as any disturbance occurs the lively little pests have jumped off and are invisible on the ground beneath. It is difficult to kill them by spraying with mixtures which kill by contact, because the first touch of the spray sets them to jumping their best jumps. As these minute insects are, however, good biters, as the leaf holes show, they may be readily killed by poison dusted or sprayed upon the leaf surface, to remain there until called for by the pests. The insect is very abundant in some parts of California and lives comfortably on several weeds until the kind planter puts potato or tomato or some other garden foliage within his reach. If your plants begin to pine away and the leaves show the work which the picture represents, do not lose time; apply Paris green in a spray of one pound of the green to 150 gallons of water, or mix Paris green with twenty times its bulk of flour and dust the leaves with that mixture. Do not wait until the leaves look as bad as the specimen shown; look sharp for the first sign of spindling or perforations and poison the foliage at once. In our own gardening we lost a good many tomato plants before we learned the lesson. The flea beetle whose picture is shown on



Flea Beetle, Enlarged and Natural Size.



Stenopelmatus, or California Potato Bug.



Potato Leaf Showing the Work of the Flea Beetle.



On the Levee at Port of Chemulpo, Korea.



Gate in Old Chinese Wall at Anjou, on the China-Korea Boundary.

this page is known to the entomologist as *Epitrix hiotipennis*, but if you are as good a jumper as he is you can skip the name.

Another insect which likes potatoes is wholly unlike the foregoing. He is large and clumsy and makes large holes in the tuber, instead of small holes in the leaf. One of his names is "California Potato Bug," but he is not a bug, but a ground cricket, and his large name is *Stenopelmatus*. As Mr. Clark says, there are frequently noticed in the potatoes places where the tubers are bitten into as though mice had been gnawing them. These wounds are quite evident in some specimens, and

render the tubers attacked unmarketable as a first-class product. The insect causing this is a large and clumsy member of the family to which the katydids belong. It has a large and horny head and a soft and heavy abdomen. Its movements are awkward and slow, and its color ranges from yellow to brown. It never has wings. It will be at once recognized from the figure. These insects seldom become numerous enough to do any large amount of damage, but nevertheless they should be killed—crushed—wherever found. They can be trapped by placing bits of board upon the ground in the field. The insects get beneath these boards and may be easily killed there.

### Scenes in Korea.

Two glances at the opening country of north China and Korea are given on this page just to remind readers of the manifest destiny of this century. One picture shows one of the gateways in old Chinese wall between Manchuria and Korea with the remains of what seems to have been at some remote period a fine stone bridge, or else the stone bridge remains and the country in the foreground has been washed out. The other picture shows the levee at a Korean port where the bustle attendant upon the entry of American and European enterprise is discernible.



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E. J. WICKSON. Horticultural Editor

San Francisco, January 11, 1902.

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## The Week.

It seems almost as hateful as slapping one's sweetheart to growl at this beautiful weather, but what help is there for it? The elements just stand around and look pretty, and will not do a thing. The worst of it is, too, that growling will not do anything, either. If you slap your sweetheart—that is, supposing she is an old-fashioned girl, of course—she will weep, but these pretty pink and white clouds will not weep a drop. It is getting to be serious business. Part of the State is done up already, so far as dry land farming is concerned, and what is going to happen to the underground reservoirs in the same region is a question also. Of course, the chance of summer crops still remains, providing later rains should be more generous, and they may be of great help in holding for better years.

In the greater parts of the State the situation is fairly good, and there is still time for ample rains and unusually full crops will be assured by them. The sooner they come the better.

Wheat is upward bound, but shippers are holding down with all their might. Five straight wheat and two wheat and barley cargoes went out during the week, crediting the State with another half million dollars. All the leading cereals are strong and a little higher. Oats are quiet here and selling relatively higher at northern ports. A small shipment of rye and mustard seed has gone to New York. Beans are firm, with a slight improvement for most kinds. Bran and middlings are higher. Hay changes with the weather outlook—up and down with the clouds; this week prices are well maintained. All meats are unchanged—beef quiet, mutton steady and hogs looking upward. Butter is unchanged, but slow and weak for lower grades of fresh butter. Cheese is weak except for fancy new. Eggs are declining. Poultry is mainly firm, all good stocks selling well and turkeys higher. Potatoes are unchanged and still steadily held. Onions favor buyers a little. Both potatoes and onions are coming from the north. Apples are firm and high. Oranges are selling better, especially fine, large Navels. Lemons are unchanged. Dried fruit is firm for all good to choice stock and light supply. Nut prices are rising because of scarcity, especially IXL and Languedoc almonds, but the demand is not active. Honey is quiet and steadily held. Hops are looking up a little, bids of 11c for nice lots being reported. Wool is

sought for, but there is little to be expected before the spring clip comes in.

We have carefully read a very full report of the meeting of raisin growers held in Fresno on Saturday last. This is the meeting noticed in our last issue which was for the purpose of closing the existence of the raisin growers' association, or doing better. We are glad to see that the meeting resolved to do better and arranged for a committee of fifteen which is to be in session day after day for at least a week in the hope of saying or hearing something which will help the growers to associate themselves on an enduring foundation. From the state of mind revealed by the speakers at the convention a protracted meeting of some kind seems to be necessary to convict of sin and melt the heart, and we hope this committee will remain with their task even if it should take all winter. There seems to be existence among those near the center of the raisin industry such active personal fermentation that nothing but long standing and frequent racking, perhaps, can clear the situation. This the committee should be able to accomplish if they are earnest and patient enough, and in this hope lies all the promise there is discernible. We have no room for account of the personal issues and the vituperation freely indulged in. This all goes for naught within a few miles of its outbreak. What those in the raisin interest and those who hope for the progress of the State earnestly desire is that personal warfare and journalistic enmity shall stop forthwith, and if there is any hope in co-operative production and sale of raisins let it be shown forth. How people can quarrel so hard and backbite so long is passing wonder. Let the committee put the fighters in the great ice factory south of the city and then study carefully to see if there is anything the growers can do to save themselves.

We are delighted with the transcript which comes from the Government printer of the testimony given by Prof. Elwood Mead before the United States Industrial Commission last summer. Everyone who desires to take a broad and candid look at the irrigation interests and problems of the whole country should send to his Congressman for a copy of this document. Prof. Mead has demonstrated his fitness for the leadership of the irrigation work of the Government by the wonderful breadth and detail of his knowledge of the situation in all parts of the United States. The next feature of the testimony which impresses the reader is the calmness and candor of its deductions. There is nothing wild-eyed or effusive about Mr. Mead. He indulges in no booming anticipations or declarations, but he has head enough to see clearly the results which will spring from proper irrigation development and to insist that such development must and shall be safe and proper. His testimony should be sought by all who are enquiring for sound economics as well as safely progressive agriculture.

Only last week we shouted our confidence in the prune. We are glad we did it so soon, because now comes the report that prune trees are being largely sold by the Santa Clara valley nurserymen, and that shows that the home of the prune does not propose to eject its inmate. Another reassuring fact comes in the quick sales reported of the remnant of last year's crop. Only recently the question was: what can be done with the prunes? Now it seems soon to be: where can we get prunes to do something with? This is good news for those who have prune trees, but we must give them this heartfelt advice: If you want to make anything out of them, treat your trees white.

Quite a sensational statement is telegraphed from Washington that the Government expert who has been studying the soils and waters included in the new colony enterprises upon the Colorado desert in adjoining parts of California and Mexico, finds that alkali is present to an extent likely to wreck the fond hopes of those who are taking up these lands. The fact is not new, though it is perhaps desirable that the fullest possible warning should be given to people of what they are likely to encounter in that neck of the desert. It is not new because the lands were explored to determine their character some time ago under the direction of Prof. Hilgard, and full statements of the findings were sent at once to

those most interested at the south and are now being prepared for publication by the University Experiment Station. The report of the Washington experts, which will ere long appear, promises to be confirmatory of the findings by our California experts. All the land is not alkaline, of course: alkali does not appear that way, but it is so generously distributed that it should be very carefully looked out for.

We urged counties recently to protect the fruit interests by appointing horticultural commissioners. We wonder if we made a mistake. We have just examined trees held up by such an officer on the claim that they were infested by San Jose scale. The ignorant officer evidently mistook the natural lenticels of the bark for the scales. The result is that regular nursery business and regular planting business are thrown out of gear. So long as supervisors will select ignorant people to do expert work, good laws will work hardship and come into disrepute.

## QUERIES AND REPLIES.

### Longevity of English Walnut Trees.

TO THE EDITOR:—I have been told that the soft shell walnut commonly grown in California is good for about twenty-five years and for greater age should be grafted on the native black walnut. I can find only one lot of such trees on the market and find that the grafts were taken from untested seedlings. I do not like to lose the time required to get other grafted trees unless it is pretty certain to be necessary for the best results.—PLANTER, Los Angeles county.

Nearly all statements about the longevity of walnuts beyond the period of twenty-five years are by inference and not from observation, although there are a few native black walnut trees which were grafted with the English walnut more than twenty-five years ago in the Winters region of Yolo county. Of course, the native black walnut as it naturally occurs along streams in the central part of the State is a large forest tree of indefinite age, and by inference the English walnut grafted upon it would also have great longevity. The Santa Barbara soft shell walnut, although it originated more than twenty-five years ago, has not been widely planted for more than twenty years, and we doubt if any one has a right to fix its period at twenty-five years except perhaps in soils which do not favor longevity. There seems reason to believe that the native black walnut root is, however, most excellently adapted as a stock for the English walnut, and that its hardness against both drouth and temporary rise of water is desirable to secure. However, if we were ready to plant walnuts on land well adapted to them we should not wait for the black walnut roots. It must be said that in taking walnut roots grafted with untested seedlings you are quite as likely to secure as uniform a product as you are from planting seedlings of the Santa Barbara soft shell. There would likely be some variation in either case, but no greater in one than in the other. From this point of view you might use the grafts of which you speak, gain the black walnut foundation, and have just as good assurance as you would have with seedling trees that the tops would prove satisfactory. Even with the best selected seed there is variation, and coming walnut trees will be formed of scions from trees of the best type grafted on the best root to be found, and this will probably be the native black walnut.

### Shriveled Olives—Oil Making.

TO THE EDITOR:—We had anticipated pickling two barrels or more of olives from our first bearing of olives or a young six-year-old orchard of about 350 trees. But the heavy freeze and frosts of last week have damaged many of them, apparently. They look shriveled, both those that have turned black and the green ones, too, although some seem not to be injured at all. On soaking them in water they regain their plumpness. Will they still do to pickle? We are using the fresh water process. Or are they still good for oil making? We have a very large old tree that is heavily loaded with small olives, so thick that they hang in clusters. What is the most primitive method of making oil from them? Would the damaged olives do to pickle for immediate use, if one did not expect to keep them?—READER FOR TWENTY YEARS, Napa.

Shriveling of olives is due to drouth rather than frost. The trees during a dry autumn are not able



to produce sap enough to fill out the fruit plumply. This shriveling disappears after rain, even while the fruit remains on the trees, and the fruit can be plumped out by putting in water as you describe. Such fruit can be made into pickles, which may not have long keeping qualities, but they are otherwise good. The olives would also do for oil, and so would the small olives you speak of. Much good olive oil has been made on a small scale with a small cider press. If you have not this you can crush the olives in a cask with a pounder, put the pulp in cloth bags and place them under any sort of pressure which will squeeze the oil out. Collect all the juice which is squeezed out in tin vessels, and after standing awhile skim off the oil and filter it through a couple inches thick of cotton wool and then let it stand in tin vessels about a month to clarify itself still further. Remove from these vessels carefully so as not to stir up the dregs, and bottle for use. This is, of course, not economical, because only the first pressing of oil is secured, but this is about the simplest form to which oil making for family use can be secured. Of course olives damaged in any way will not make the very best oil, but it may be very palatable.

### Sweet Potatoes, Orange Seedlings, Figs and Cling Peaches.

TO THE EDITOR:—When and how shall I sprout sweet potatoes, i. e., give a description of the process through which the potato must be put to produce the plants? What kind and where can I get orange seeds enough to raise about 200 seedling trees? When should they be planted? Will the Smyrna fig do well in this part of the country? Is it the best fig tree to plant? Of all Clingstone peaches, do you consider the Seller's and Levi Cling as good as any to plant in this part of the country for canning purposes? Do you consider the above-named Clings all right as to size?—F. H. CUTTER, Corning.

If you wish to hurry the sprouting for early planting, make a hot-bed, but do not use too much manure for fear of getting too much heat in our mild winter temperatures. Ordinarily, bottom heat is not required, for sweet potatoes bedded in moist sand and barely covered sprout quickly enough if put under a sash frame on the sunny side of an outbuilding or high board fence. Keep moist, but not wet. As you take off the first sprouts for planting, others will appear and so you can plant in succession. Buy a box of seedling oranges in the market later in the season when the fruit is fully ripe and when the ground becomes warm enough to sprout the seeds. Plant in an open air seed bed made of light sandy loam, keep moist, but not wet, and, as the season advances, cover with white cloth or lath frame to screen the seedlings from excessive sun heat. The Smyrna fig is the only one we should think of planting for drying; for table use other varieties should be included. Seller's Cling and Levi Cling are good Clings if you want two ripening wide apart. There are other desirable ones. The list we gave in last week's issue may help you. These varieties are all right for size if the trees are properly pruned, the fruit thinned and moisture enough assured to enable the tree to finish good large fruit. Without these essentials no peach, especially not late ones, is likely to be satisfactory.

### Broom Corn Growing.

TO THE EDITOR:—I am thinking of moving to southern California to pursue my business of broom making. Is broom corn grown in your State and where? What is considered a good crop?—BROOM MAKER, Tennessee.

Broom corn has been grown in California for a great many years, the chief product being made along the San Joaquin and Sacramento rivers and in some of the coast valleys in the central part of the State. Los Angeles is one of the chief counties in the growth of common Indian corn, and it would seem as though the same lands would be adapted to the growth of broom corn. We think you would have no difficulty in getting plenty of broom corn in southern California if the season's rainfall should be adequate, or if the growth should be undertaken on irrigated land. The yield of 700 to 1000 pounds of brush to the acre is counted a good crop. The crop depends altogether on the character of the season and the land chosen, but you might count, if conditions are favorable, on a larger yield than is usually at-

tained in the central part of the country. That is our experience with most crops which are undertaken here. If you should write to Mr. Frank Wiggin, secretary of the Chamber of Commerce, Los Angeles, he might be able to give you names of parties who have grown broom corn in that region, from whom you could get definite statements by correspondence.

### Tomato Diseases.

TO THE EDITOR:—Will you please, in the PACIFIC RURAL PRESS, give remedy for fungus growth on tomatoes, field culture? Some fields in this vicinity this season have been attacked, the fruit rotting in spots, rendering it unfit for market. Are not tomatoes sometimes infested with worms?—A. WARREN ROBINSON, Napa.

We have had a good deal to say in the past about the very serious troubles of the tomato. There are several different diseases, some amenable to treatment and some beyond control so far as we know. One is what we have formerly called collapse blight, because a plant or a part of a plant collapses, wilts and dies without sign of disease upon it. This is a bacterial blight. As the germs are in the circulation of the plant, and not upon the surface, no application can avail. The infection is known to be carried from one plant to another by insects which carry the juice on their beaks or mandibles. If insects are not present the disease travels very slowly and it can be largely checked by complete burning—top and root—of the plants which are killed by it. If insects can be prevented from visiting the vines, this blight is not likely to occur except in isolated cases. Mr. A. R. Gurr of Merced finds that by applying coal tar with a small brush or swab to the main stems of the vines insects are excluded. There are other blights, but they are clearly seen by discoloration of the leaves. One is a blackening of the leaves, followed by black decay of the fruit at the apex, and this is probably the one to which Mr. Robinson refers. Still another disease is a fungus, making its presence known by yellowish spots or postules upon the leaf surface. The last two diseases are checked by the Bordeaux mixture sprayed upon the leaves as soon as the disease is first seen. Tomatoes are infested with worms. The worm that works in the corn ear works in tomatoes, and there may be others.

### Almond Varieties—Stub Roots.

TO THE EDITOR:—I ordered Princesse almond trees but my nurseryman sends me "paper shell." Shall I plant them? In planting trees I hear that better results are attained by cutting back the roots to an inch or two of the stem instead of planting them the length they come from the nursery. Is that true? I find your book on "California Fruits" an invaluable guide and it answers nearly all the questions which arise in my experience, but I would like special advice on these points.—ORCHARDIST.

The Princesse almond is generally accounted the best of the paper shell class and is often referred to when the wider term "paper shell" is used. You ought to have some assurance furnished you as paper shell are really of the best type. We should insist on that point, unless we could be shown that the trees from which these buds were taken had a record of regular bearing of nuts thoroughly acceptable to the trade. If this is assured the trees offered you might even serve you better than the Princesse.

The roots of fruit trees for California planting should only be trimmed enough to remove injuries caused by digging. The severe shortening-in of roots which was proposed by Mr. Stringfellow of Texas certainly gives a good growth of trees where moisture can be depended upon near the surface of the ground. In California there should be a deeper point of growth and this is secured by taking greater length of root at planting. Under our conditions, where in spite of the best cultivation, and in fact caused by it to a certain extent, there are several inches of dry soil at the top, the young trees with stub-roots will fail. The Stringfellow method has no general value for California, though it may be successfully used in moist or irrigated lands, but even then we see no advantage in it.

### Wattle Bark Growing in California.

TO THE EDITOR:—What about growing wattle bark in California? Has anything been accomplished in that line? How are the trees grown?—READER, Elk, Mendocino county.

Very little has been done in the cultivation of the

wattle for tan bark in this State, although the matter has been much talked about for the last twenty years or more. There seems to be no difficulty about growing the trees in our valleys, for they are hardy enough to endure the frosts that occur in such places, and are now growing in various parts of the State from seed distributed by the University or grown by nurserymen. The growing of the plant from seed is very simple, providing the seed is scalded with boiling hot water before planting; otherwise it may lie in the ground for a long time without germination. With the scalding treatment the seeds start readily, the plants grow rapidly and should be planted out in permanent form when 2 or 3 feet in height. It would probably be a good plan to plant at 20 feet distances, cutting out alternate trees when they begin to crowd each other, and allowing the remaining trees to attain larger size. This seems to be all that is necessary to do to start, but how profitable a venture, based on the production of tanning bark, would be is altogether a matter of conjecture, although it must be said that it would seem to be a promising venture.

## WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending January 6, 1902.

### SACRAMENTO VALLEY.

The severe northerly winds toward the close of December were followed by heavy rain on the 1st of January and warmer weather toward the close of the week. Very little damage was done by the drying winds and the rain came in ample time to soften the soil for cultivation and revive grain and green feed. Plowing and seeding are progressing satisfactorily, and in some places the orange acreage will be larger than that of last season. Early grain is in excellent condition. Pastureage is abundant and stock are doing well. Orchards and vineyards are in good condition. Pruning is nearly completed.

### COAST AND BAY SECTION.

Generally cloudy weather has prevailed during the week, with heavy fogs and rain in the central and northern sections. The days have been somewhat warmer than during the preceding week, but the nights have been cool and frosty. Very little rain has fallen in the southern counties since early in December, and grain and feed are showing the lack of moisture. In the central and northern districts early grain is in excellent condition and pastureage continues abundant. Plowing and seeding are progressing except on the very dry lands. In Sonoma county the grain acreage will be larger than usual. Stock are doing well. Tree and vine planting are progressing.

### SAN JOAQUIN COUNTY.

The weather has been generally cool and cloudy during the week, becoming somewhat warmer toward the close. Heavy fogs have prevailed in some sections. Rain has fallen in portions of the valley, in some places sufficient to benefit grain and grass, while in most of the southern districts there was only a trace. Heavy frosts have occurred in many places. The cool, dry weather is having an injurious effect on grain and pastureage, especially in the southern districts, and retarding plowing and seeding. In the more northern section, however, where the rainfall has been more abundant, grain is in very good condition and farm work is progressing. Vine and tree pruning continue and vineyards and orchards are in good condition.

### SOUTHERN CALIFORNIA.

Warm, dry weather has prevailed during the week, greatly to the detriment of early sown grain, pastureage and orchards. Farmers and orchardists are using all the available water for irrigation. The hot, drying winds toward the close of December absorbed most of the moisture in the soil, retarding the growth of grain and green feed, and rendering further cultivation almost impossible in some sections. Oranges were badly damaged; the loss will be nearly one-third in some orchards in Orange county. Deciduous fruit trees are in danger of premature budding. Cooler weather and rain are badly needed. As this report closes there are slight indications of rain.

### Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, January 8, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	.21	15.34	27.67	19.15	68	38
Red Bluff.....	.70	10.36	12.90	11.40	64	36
Sacramento.....	.35	6.33	10.00	8.22	58	42
San Francisco.....	.14	5.94	10.91	11.11	58	42
Fresno.....	.08	.08	6.94	6.93	64	38
Independence.....	.00	1.34	5.00	2.51	64	32
San Luis Obispo.....	.17	4.56	20.53	7.39	84	36
Los Angeles.....	.00	2.46	7.76	7.85	86	44
San Diego.....	.00	.77	2.45	3.49	80	50
Yuma.....	.00	.22	.02	1.80	80	44



## ENTOMOLOGICAL.

## Scale Insects and Their Parasites.

By EDWARD M. EHRHORN, Horticultural Commissioner of Santa Clara County, at the Fruit Growers' Convention.

It is ordained by the Supreme Ruler of the Universe that all living things shall not become burdensome upon one another, and we find that this great law is not only appurtenant to the larger animals and plants, but is found to extend down to the most minute organisms—some so small that a good microscope is required to detect their existence. We find that, through artificial means, these conditions have somewhat changed and in some instances have caused great destruction to various industries. Thackeray is quoted as saying that "Parasites exist always," and the truth of his saying is probably best illustrated by the various families of insects preying as they do upon beast and plant, but largely also upon one another.

Agriculture in all its various branches has no doubt had more than its share of parasites. The cattle raiser, sheep raiser, grain producer and, last but not least, the fruit grower have all had their share of destructive insect enemies, and at times very much more than their share. The Tsetse fly and Bot fly kill thousands of cattle annually. Thousands of sheep succumb to the ravages of the gadfly, scab mite and lung parasite. Tens of thousands of acres of grain are annually destroyed by the Hessian fly, chinch bug and innumerable other pests, and we fruit growers have pests without number infesting our trees and vines in every part and at all periods. We find them attacking the plant from the minute rootlets to the uppermost twigs, on trunk and branch and twig, leaf and fruit. There is no part immune from their attack or that does not suffer from their presence. Minute as these pests are, microscopic even, they are sufficient to reduce our profits, largely increase our labors and give us infinite worry and anxiety.

**THE SCALE INSECTS.**—Probably the most persistent, annoying and destructive group of insects which the fruit grower has to contend with is the scale insect or coccidæ, and the object of this paper is to discuss this particular group more in detail.

Scale insects (coccidæ) belong to the order Homoptera and are closely allied to the aphids or plant-lice family in their habits, but differ greatly in appearance. Some confine themselves to a single genus or plant, while others attack a great variety, and, when present in great numbers, soon cause the plant to lose its vitality and, if not checked in time, will soon kill it.

Scale insects have been known from time immemorial. The beautiful and impressive color of the curtains of the tabernacle and the robes of the priests, which brought awe and inspiration to the tribes of Judah, are said to have been obtained from a scale insect (*Kermes iticis*). This insect is still used as a dye in some remote parts of Europe, and in some parts of Spain the inhabitants, mostly women, help support their families by collecting *Kermes*. The cochineal insect (*Coccus cacti*, *Limy*) has been used as a dyestuff for a very long period. Our shellac of commerce is the product of a scale insect (*Tachardia lacca*) and was known in 1781. There are many other species whose usefulness was well known, and it shows that in olden times scale insects were mostly considered beneficial; and, although one or two are still so regarded, yet, as a whole, they are very injurious.

**THE OPPORTUNITY.**—Horticulture has made such rapid strides within the last fifty years and the orchard area has increased to such an extent that scale insects have, so to speak, found themselves in clover, and many species have taken hold of the new food which man has seen fit to propagate. Very few of our native species have changed their habits or their food plants, and most of the troublesome species we have to do battle with are imported from foreign countries. The orchards of California have been troubled by these pests for more than thirty years, and some species which once threatened our industry, especially the cottony cushion scale (*Icerya purchasi*) and the San Jose scale (*Aspidiotus perniciosus*, Comst.), have been conquered, but other species have taken their place, and to-day we find our trees infested with many scales, of which my time will allow me to make but brief mention.

**THE BLACK SCALE.**—The black or olive scale (*Lecanium oleæ*, Bernd.) is found on evergreen and deciduous trees. This insect can be found everywhere from the mountain tops to the ocean's edge, on native and cultivated trees and shrubbery. It is a foreign species, but its native home is not positively known—some say Australia, some say Europe and others South Africa. It is easily recognized by its color and two transverse ridges on its back, crossed by a third ridge, forming a capital "H." In the orchard it infests the olive, orange, lemon, apricot,

peach, prune, pear, fig and also all ornamental plants, such as oleanders, pittosporum, roses, geraniums, peppertrees and many others. It has numerous enemies, but none seem to be able to cope with it satisfactorily. While it is true that the imported ladybird (*Rhizobius ventralis*) and the native species (*Chilocorus bivulneris*) and others will keep it in check in evergreen orchards, we find that our deciduous trees do not offer enough protection for these during the winter season. Several true parasites attack it, but are not able to cope with it in a manner to be relied upon. The chalcid fly (*Tomocera Californica*) will reduce it from 30% to 75%, but the remaining scales contain sufficient eggs to again stock the tree.

**THE SOUTH AFRICAN PARASITE.**—In Australia, Italy and South Africa this scale is kept in check by parasites to such an extent that it is hard to find any. We have succeeded in importing some of these parasites, and hope ere long to see some good results. To show how efficient the South African parasite (*Scutellista cyanea*) is, I will read what Prof. Chas. P. Lounsbury of Cape Colony has to say. In a letter dated Jan. 30, 1900, he says: "It may be practicable to get the parasite established in California, but the task would be no trifling matter. There is a severe obstacle at the very start, viz., the rarity of the insect here due to their subjection of the scale. *Lecanium oleæ* is not an orchard pest everywhere in the Colony, and only rarely do I find even isolated scales among cultivated trees; when I find them they are nearly always parasitized. On oleander, particularly where ill-kept, in myophorum hedges and on indigenous growth on the plains, is where I generally see the scale, and then seldom in large numbers. You may imagine that, under these circumstances, obtaining the parasites or even tracing their habits is not easy."

Under date of April 10, 1900, writing to Mr. S. F. Leib of San Jose, he says: "While I should much like to comply with your wishes at once (referring to sending parasites), I fear that the circumstances of the case will render considerable delay unavoidable. The black scale is so thoroughly subdued, just as the cottony cushion scale now is with you, that it is by no means easy to get hold of it. Nobody here knows anything but the injurious species, hence help from farmers in finding colonies of black scale is out of the question." Under date of May 15, 1901, Mr. Lounsbury further writes: "We have not forgotten you, but we have failed to find any more black scale fit to send. Cape Town and the suburbs are quite free again, the scales being few and far between, even in its haunts, where the material sent last year was found. I quite expected my assistant would find a little about Port Elizabeth—our next largest town—some hundreds of miles east of here, but he writes that he has been unable to find more than an old scale here and there, and not a single twig worth picking." From the above we will readily see that, if this parasite is ever established in California, we may expect great things.

**THE RED SCALE.**—Next comes the red scale (*Aspidiotus aurantii*, Mask.). This pest is better known to the growers of southern California, as it is one of the worst scale insects of the orange groves. It is one of the armored scales and is very difficult to conquer. Its native country is not known exactly, but Australia has furnished it to California. When it first appeared with us it seemingly only attacked the orange, but now we find it infesting walnut, grapevine, rose, century plant and many others. We have several ladybirds which feed readily upon this scale, among which are the twice-stabbed ladybug (*Chilocorus bivulnerus*) and the steel-blue ladybugs (*Orchus chalybeus* and *Orchus Australasia*). These ladybugs no doubt cause considerable reduction of the scale, but we need a more effective parasite to cope with it. Mr. Geo. Compere, special agent of State Board of Horticulture, fortunately has been able to find one in China, and already several hundred have been successfully bred and liberated by Mr. Alexander Craw in the orange groves of southern California. This parasite is very minute and can hardly be seen with the naked eye, but it seems to be very active and very prolific.

**YELLOW SCALE.**—Another scale very closely allied to *A. aurantii*, and by many considered but a variety of it, is the yellow scale (*A. citrinus*, Cogl.). This scale is not now a dangerous one, as it has a very interesting and efficient parasite (*Aspidiotiphagus citrinus*, Craw) coping with it. Strange as it may seem, the yellow scale seldom attacks the wood of the tree, whereas the red scale attacks wood, leaf and fruit.

**OTHER SCALES.**—The soft orange scale (*Lecanium hesperidum*) is another species which occasionally gives trouble, but, owing to its parasites, soon vanishes again without having caused much trouble to the grower. This scale attacks a great variety of plants, and is a widespread species, readily recognized by its oblong, flattened shape. The two most common parasites which attack this species are *Coccophagus lecanii*, Fitch, a very minute chalcid fly, easily recognized by a yellow band across the thorax, and *Microterys flavus*, Howd., a beautiful chalcid which is very abundant and quite large in comparison with its co-worker.

A comparatively new scale insect for California is

the purple scale (*Mytilaspis citricola*, Pack.). This species made its first appearance in some orange trees imported from Florida into Los Angeles county in 1888. This is one of the worst pests of the orange, and I am glad to say that very stringent measures are being taken to completely eradicate it. Some very efficient parasites have also been introduced which will, it is hoped, assist in checking its ravages. This scale does not attack deciduous trees.

The common ivy scale (*Aspidiotus hederæ*, Bouche) is another general feeder and at times becomes quite a pest on lemons. It is, however, kept in check by various ladybugs and numerous other parasites, among which are *Aphelinus fuscipennis* and *A. diaspidis*.

**THE PESTS ENUMERATED.**—Three scale insects which are very injurious to deciduous trees are the brown apricot scale (*Lecanium armeniacum*, Craw), the frosted scale (*L. pruinosum*, Cog.) and the Italian pear scale (*Diaspis pyricola*, Delguer). The first two insects attack the apricot, peach, prune and pear in some sections of the State, but are kept in check by the wonderful parasite, *Comys fusca*, Howd., and, wherever introduced, so effective is its work at times that it has been impossible to find sufficient scale on the trees to collect material for introducing the parasite into other sections. It is well for those who find these scale insects established in their orchards to secure a colony of the parasite from Alexander Craw of the State Board of Horticulture, as it will save them much labor and expense.

The Italian pear scale (*Diaspis pyricola*) attacks the pear, apple, prune and peach trees. When the young limbs are badly attacked, it does not poison them as does the pernicious scale, but it causes deep depressions in the bark and materially stunts the tree. As yet we have no parasite which will reduce the pest, although the twice-stabbed ladybird (*Chilocorus bivulnerus*) will keep it down when exposed on the limbs. This scale has the habit of crawling under moss and lichens and thus protecting itself against the attack of parasites. Good oil washes have been successfully used, as winter washes for its extermination.

Another scale which troubles the apple, and which is mostly found on old trees, is the oyster shell scale (*Mytilaspis pomonum*, Bouche). It is not really considered a pest and has very many enemies. Our scale-eating ladybirds do their share in checking its spread, but several chalcid flies, viz., *Aphelinus mytilaspidis*, Le Baron, *Aphelinus fuscipennis*, Howd., and others keep the pest from spreading. I have found this species on rosebushes and the passion vine, and it is said to infest a number of other plants.

One of the most general feeders among scale insects is the greedy scale (*Aspidiotus rapax*, Comst.), which infests pear, apple, plum, peach, cherry and all kinds of ornamental shrubs. One of its favorite foods is the Texas umbrella, but even the blue gum is not exempt from its attack. The twice-stabbed ladybird (*Chilocorus bivulnerus*) and Pilate ladybug (*Exocomus pilatei*) feed readily on it, but I believe its best enemy is the chalcid fly (*Aphelinus fuscipennis*, Howd.). This is probably a native species, as we find it on all our soft wooded trees and shrubs in very isolated places.

There are numerous other scale insects which have been reported doing damage, but which as a general rule are not considered pests in the orchard. Among the most common are: The Hemispherical scale (*Lecanium hemisphaericum*, Tarq.), which is found on chestnut, orange, oleander and others, and which has numerous parasites; English walnut scale (*Aspidiotus juglans-regiæ*, Comst.); rose scale (*Aulacaspis rosæ*, Sandb.); willow scale (*Chionaspis ortholobis*, Comst.); pine scale (*Chionaspis pinifolia*, Fitch); insignis pine scale (*Physokermes insignicola*, Craw); cottony maple scale (*Pulvinaria innumerabilis*, Rath.) and a few mealy bugs. All of these are probably controlled by natural enemies, as they have never been known to spread in great numbers.

The cottony cushion scale and the San Jose scale, as mentioned above, demonstrate what we can expect from beneficial insects, provided that we can find the right one in its native land.

**KEEP OUT OTHERS.**—Before closing, I wish to call attention to the many close calls California has had in introducing some of the worst scale insects known to infest trees in foreign countries, and which were only prevented from being established in our orchards by the establishment of a quarantine department and its strict regulations, by a thorough system of orchard and nursery inspection and by the vigilance and conscientious work of the commissioners and the quarantine officer.

Thousands, yea, millions of dollars have been saved to the fruit growers of the State through the establishment of the State Board of Horticulture and its Quarantine Bureau, and shall we stop at this? I say no; let us, if anything, widen the field, let us ask our legislators to give us more aid so that we may not only prevent the introduction of pests, but that we may add to the army of our microscopic friends those which are waiting for us in foreign lands whence came their natural food.

Mr. Ehrhorn's paper was well illustrated with specimens of scale insects as infested by their parasites, including the newly imported species.



## THE DAIRY.

### Scientific Education of the Creamery Operator.

By MR. LEROY ANDERSON, Dairy Instructor of the University of California, at the Creamery Operators' Convention in San Francisco Recently.

The words "science" and "scientific" lose much of the dread which is attached to them by many people when their true meaning is understood. Not only are these words dreaded by the casual reader, but there are some who think they relate to phenomena which are too deep for them to fathom or too high for them to bother about trying to climb up to. Science should cause dread to no one nor be poohed at by any, as indeed it would not be even if its definition, as given in a common every-day dictionary, was only read occasionally. Here we find science described as "knowledge gained and verified by exact observation and correct thinking," i. e., by making correct observations of whatever problem is being investigated and then drawing the conclusions that are true to those observations. There must be, moreover, a methodical arrangement of the observations and conclusions, so that the whole may be arranged in a logical and rational system. Otherwise there could be no science, or, at least, the science would soon be lost to the observer and never be of any value to others. All that is known to-day concerning the science of chemistry has been in existence since the world began; but there was no science of chemistry until comparatively recent years, when men began to make careful observations of the phenomena that they beheld and to record and verify them. Each year and each succeeding generation has seen more observations made and recorded, until now what constitutes the science of chemistry fills whole libraries, and the mind of no one man can fully comprehend all its ramifications.

**AGRICULTURAL SCIENCE.**—It has been said, and perhaps rightly, that there is no science of agriculture; that what we may be disposed to call the science of agriculture is such a mixture of the sciences of botany, physics, chemistry and the like, and is so dependent upon these that a distinct science of agriculture cannot be recognized. It may be said with equal force that there is no science of butter making or of cheese making, for here we find the sciences of chemistry, physics and bacteriology, so indispensable and working together in such a manner as to preclude a separate and distinct science of butter or cheese making.

If these things be true, there is no hindrance, however, to their being scientific agriculture or scientific creamery practice, for scientific is another word for system, exactness, accuracy, when coupled with a knowledge of the principles underlying the work in which one is engaged. We would expect, then, that the proper education of a creamery operator would be such as to imbue him with the habit of being methodical, systematic and accurate. But he must be more than this, for science carries with it a broader and deeper significance. To be truly scientific one must be an investigator, a searcher after more knowledge than is now in books or in one's own mind, and to the degree that one is endowed with this desire, joined with an inborn habit of systematic accuracy, to such a degree will he be scientific. It would seem, then, that heredity has something to do with man's scientific training, whatever his vocation, for the desire for investigation and the virtue of accuracy come to men as naturally as do other inherited qualities and dispositions.

**THE CREAMERYMAN'S OPPORTUNITY.**—If a man in any walk of life has an opportunity to be scientific and to deal with the forces of nature which have been reduced to a scientific basis, that man is the creamery operator. From the time the milk comes into the weighing can until the finished product goes to market, he is governing and guiding natural forces that are working continually for the better or for the worse, very much as he wills. And what he wills depends upon two main factors: his time and inclination for doing and upon his knowing what to do. I mention the time element, because it is a serious matter with the modern creamery operator to know he is to do what he knows to be necessary when he is rushed from early until late with routine labor. An emancipation from some of the severe physical labor would afford opportunity for better mutual development and undoubtedly bring an improvement in our dairy products. The more completely our plants can be supplied with the best of modern machinery the less will be the physical drain upon the operator.

**DAIRY LITERATURE.**—Knowing the why and how of doing gives the key of success in the long run, and this is the goal of all truly energetic creamery operators. And how to become acquainted with the why and how of things is the question many of us are asking. The creamery operator of to-day is blessed far above his fellows of ten years ago; then the Babcock test, now so simple and indispensable, was not known; the role of bacteria in butter and cheese making was not understood as now. In fact, the literature of dairying prior to that time is worthless as compared with the value of what has been published since. It

is to this literature that the creamery operator can look to help him out of many difficulties and guide him on the way to a scientific understanding of his business. He should, therefore, be gathering a library of the best and latest books and experiment station bulletins touching upon his particular line of activity. By a study of these he can avail himself in a short time of information which has required months and years of the most careful and scientific experimentation to find out and verify. In a nutshell, he has the conclusions of wise and thoughtful men who have had laboratories and equipment at their disposal costing thousands of dollars, and who are devoting their whole lives to solve the problems which are vexing to the every-day worker at the churn or cheese vat. What is read or learned from the literature concerning our business is of little use, however, unless put to practical test, and it is the duty and should be the pleasure of the creamery operator to become an experimenter upon his own account—to see if he can verify the experiments as he finds them recorded. Following out these experiments is an education in itself, for such work teaches one to be accurate and systematic, which has already been noted as the basis of a scientific education. The essence of a true experiment lies in all the steps in its progress having been so clearly noted and fully recorded that the same path may be followed by any one who may have the inclination and opportunity to do so. The more often an experiment can be verified the more valuable it is, and likewise there is always the opportunity of discovering some new idea which was not disclosed in the original.

**DAIRY EDUCATION.**—The part that the modern dairy school is playing in the scientific education of the creamery operator is a large and a strong one. During the whole course of study the necessity of system and accuracy is constantly kept before the student. He is required to record every observation, no matter how minute, and to pay such close attention to detail as to know from his report what was done as well a year hence as at the moment of completing his task. There is kept before him, in short, the terse saying of one of our best known agricultural experimenters: "Nothing is too insignificant to be noted."

Further than this, the student has opportunity to read and study all that the best minds have determined concerning the fundamental principles governing dairy practice, and he has the additional advantage of having the knotty points explained by those who have been studying the problem for a longer or shorter period. There goes hand in hand in the dairy school the study of principles and their experimental and scientific application. The dairy school is, therefore, bound to have a large influence in starting the creamery operator upon the right road to a scientific education. He may get by hard knocks during years of experience what the dairy school would give him in a few weeks, and he will certainly be a long time gaining the same impulse for scientific work, and learning how to go about this scientific work, as he will receive in the dairy school.

**DAIRY PRACTICE.**—You may have noticed that I spoke of the influence of the dairy school in starting the creamery operator upon the road toward a scientific education. I said this with sincere intention, for I believe this is all any such a short term of study can do. In fact, those who have taken four years or more in college find in after years that they were only started in their education when they were graduates. Moreover, I do not believe that any advocate of dairy schools, however enthusiastic, claims to turn out skilled operators from one or even two terms' attendance. The principles may be firmly fixed in one's mind and their application in the school practice may seem to be well understood, but there is a handiwork, an art, necessary in handling a large creamery, or cheese factory, with its multitude of duties, that is not learned in dealing with the necessarily small amounts of milk that are used in the school. The man who attends a dairy school, therefore, without having had previous experience in a creamery or cheese factory, should not expect to go out from the school into the full management of a large plant. He should be content with a minor position at moderate or low wages until he can master one by one the various parts of the plant.

**EXPERIENCED PUPILS.**—In this connection it may be well to consider the question of the advisability of admitting to a dairy course, especially designed for creamery operators, those who have not had previous creamery experience. The question is a vital one, and it seems to me must be decided in the negative in order that justice be done to both the creamery operator and to the dairy school. Before taking a creamery course, a man should first determine whether or not he would like to be a creamery operator, and his decision upon this point must be based, not upon theory, but practice. Because he may be tired of milking cows upon a ranch he must not think that his goal of happiness would be reached and his pockets filled with easily-earned gold if he could make butter in a creamery. Let him first spend a season at actual work as helper in a creamery or cheese factory, and, if his experience tells him that he likes the business, then the dairy school should admit him to its creamery course, and not until then.

**DAIRY FARM COURSE.**—If the creamery course be

thus restricted, there should be offered another course especially adapted to those who are operating or intend to operate dairy ranches and who desire more information concerning the care of cattle and production of milk, rather than so much practice in making butter and cheese as is needed by the creamery operator. For a course of this kind a farm is an absolute necessity, where proper and convenient buildings may be erected, and where such a number of cattle and other animals may be kept as will represent all the leading breeds of dairy and beef cattle and sheep, swine and poultry as well.

This is a little digression from the main subject in hand, but you should keep in mind the lines along which all agricultural work should be conducted, as well as in creamery work alone. The fact of the matter is that the men who are producing the milk are more in need of scientific education than you are to-day, both from the standpoint of profit in dairying and of producing a prime article, for you cannot make good butter or cheese unless you have good milk to start with.

In closing, let me repeat that being scientific is not a difficult task nor a bugbear to be dreaded. Use every available means to become familiar with what scientists and investigators have done and are doing to solve the problems with which you are daily battling. Put these things into practice with such a systematic accuracy that you can adequately test their conclusions and meantime be giving yourself a scientific training. Your work is an interesting one, because you are ever dealing with nature's forces, and your work will be pleasant and remunerative in the degree that you understand these laws and their application.

### The World's Butter Record Broken.

TO THE EDITOR:—From December 17 to December 23 inclusive, seven days, the Helstein-Friesian Cow Mercedes Julip's Pietertje 39480 produced 584 pounds milk, containing 23.4857 pounds butter fat, equivalent to 29 pounds 5.7 ounces butter, 80% fat, or 27 pounds 6.4 ounces, 85.7% fat. This record was made by Minnesota Experiment Station under the direction of Prof. T. L. Haecker. The last three days of the test this cow was under the supervision day and night of two representatives of that station. The product during these three days was 10.5622 pounds fat. The largest product for one day was 3.7684 and was made when under constant watch, on the sixth day of the test. The average per cent of fat during the week was 4.02; during the three days under constant watch care it was 4.21%.

S. HOXIE,  
Supt. Holstein-Friesian Advanced Registry.  
Yorkville, N. Y.

## HORTICULTURE.

### English Walnut Varieties in Southern California.

By J. W. MILLS, Foreman University Sub-station, at the Pomona Farmers' Club.

Walnuts were discussed at the last meeting of the Pomona Farmers' Club, and samples of the largest French varieties were exhibited, the nuts having come from the Pomona Experiment Station. The extremely large size and fine appearance of the samples created much comment, and numerous inquiries have since come in, asking where the trees can be secured. The varieties exhibited at the club meeting were fair samples, and from the merits of the fruit as seen, there seemed to be no doubt that they were the best varieties to plant. When other features of the variety are taken into consideration, there is considerable doubt on that point. The varieties exhibited were not recommended for planting.

Bijou is a large, irregular shaped nut. The shell is soft and easily broken with the hand. The hole through the opening is sometimes so weak that the kernel is visible through the opening that is sometimes formed during the drying. This allows worms to enter and causes the kernel to become rancid when kept for some length of time. There is also a porous core at the stem end, through which worms easily find access when the rest of the shell is all that can be desired. This weakness at the stem end is without exception with this variety at the Pomona station. The kernel of the nut is all that can be desired. It is large, plump and fine flavored. The tree is a dwarf when grafted on the Eastern black walnut, but is very prolific for its size. The foliage is dense and stiff, affording better shade than that of the Santa Barbara walnut tree, which has drooping foliage. This feature is valuable for inland situations, where the walnut is liable to sun-scald during the hot summer days.

Large-Fruited Præparturiens is a nut almost identical with the Bijou, except that the tree has still more ample foliage and affords as near a perfect protection to the nuts from the sun as can, perhaps, ever be obtained through selection. The tree is much larger than that of the Bijou, but not so prolific. This variety blossoms late enough to be absolutely out of danger from frosts. It is also late in



ripening, which is against it. The nut has the same weakness as the above named variety. Both of these varieties of nuts have irregular shapes, which detract from their appearance. This is very noticeable when a quantity is seen at once.

The second generation of Præparturiens is somewhat of an improvement on the above two in one respect. The nut is large, and of handsome and regular shape. It also has the weak spot at the stem end, which admits the worms and makes them poor keepers. It is a late bloomer and ripens late. The foliage is ample and, like the two first named varieties, has leaves that are heavy and stiff, shading the nuts much better than the Santa Barbara trees do.

All the above varieties are more susceptible to the blight that attacks the nuts than is the Santa Barbara nut. The second generation of Præparturiens may be an exception, but we are not prepared to say so yet. Where the sun strikes these large nuts they burn much quicker than the smaller Santa Barbara. This is no doubt due to their being more succulent. They start later than the smaller nuts and soon overtake them in size. When the blight overtakes them, or the hot sun strikes them during this period, their destruction is rapid.

The Santa Barbara soft shell growing beside them produced 50% more nuts in pounds. There were more sunburned nuts than on the larger varieties, and less blight. The Santa Barbara trees are much larger than the other varieties named.

As far as we know, there is nothing superior to the last named variety for general culture. The new nut that originated at Placentia, and has been given that name, is said to be superior to the Santa Barbara soft shell. It is said to be late enough in blooming to be safe from frost and appears to be precocious.

In selecting trees for planting, it is essential to success to secure trees that are budded from select trees. There is as much difference between individual fruit trees grown from nuts as there is between fruit trees grown from seed.

#### The Orange in Northern California.

By Mr. D. H. MURRAY of Oroville at the Fruit Growers' Convention.

The culture of the citrus fruits, especially the orange, in the northern parts of California, particularly in the foothill regions of Placer, Yuba, Sutter, Glenn, Tehama, and more especially Butte county, is rapidly assuming a place of importance.

A MISAPPREHENSION.—Fifteen years ago last September, on my departure from Riverside in southern California, to assume the position I now hold, I was told by many that the people north in Butte county thought they could raise oranges, but that they would soon find their mistake, and give it up as a bad job.

It did not take long to find out that oranges were growing here, and now it is an acknowledged fact, and a desire for a practical knowledge of their propagation and culture has so steadily increased in the above-mentioned counties that you can now find large orange groves of all ages, from one to fifteen years. When good care and cultivation have been given to them, they certainly rank with the best groves in the State.

These groves are not only growing and showing a dark, rich green color, but they are yielding an abundance of fruit, which gives the happy owner in return for his labor a well-filled pocket.

Butte county can boast of having at the present time 5000 acres of the golden fruit, and turned out last year, as I have been told, in the neighborhood of 500 carloads. This year the county expects to put these figures away in the shade, as the crop is estimated to be much heavier than it was last.

The bulk of the crop is being gathered from the magnificent groves of Palermo and Thermalito, together with outlying districts, and from Oroville and vicinity.

In regard to the other counties I have not been able to obtain the number of trees planted or the output of fruit for the last year. Still I have been informed that the crop is much heavier this year than it was last season. These counties will certainly do their share in turning out a larger percentage of cars this year than they did last. We will have not only a large quantity, but the fruit will be of a far superior quality to any that has been turned out before. Tehama and Glenn counties are forging to the front. The well-known Maywood colony in Tehama county has planted in the last two years in the neighborhood of 20,000 citrus trees which I have been informed by the owners are doing well.

WHY DO TREES DIE?—The question is often asked by strangers on arriving at some abandoned grove: What is the cause of the trees dying? I may say that hundreds, yes, even thousands, of dollars have been spent on some such groves.

The reason in some cases is neglect. Many have been informed that all they needed to do was to get the ground, plant the trees and at the end of two years they would have paying returns. They find out about that time that it takes considerable cash to take care of an orange grove as it ought to be cared for and the consequence is they try to cut down ex-

penses by letting the cultivation go. In consequence the trees turn yellow and even die. The following year the grove looks so bad that the owner in many cases abandons the place altogether and swears the orange business is a fraud.

LOOK DEEPLY INTO THE SOIL.—I would always advise a person having in view a model grove to test and examine the land thoroughly. You may be told it is a beautiful looking tract, but remember it may be only skin deep, and below the surface you will find hardpan, cemented gravel, pipeclay or some such subsoils which are undesirable and have caused many an orchardist much disappointment and loss; in fact, so much so that I have known them to abandon the place altogether.

Everything depends upon the character and situation of the land to be planted and according to these you must select and arrange your grove.

The orange delights in a warm, deep, fertile and well-drained soil and under these conditions will give to grower a bounteous crop. A cold and damp soil breeds disease and death is sure to follow. You will find that sidehills or rolling ground is generally the worst location for hardpan or such subsoil formation. Level ground most always has a uniform depth of soil. Always select a position for an orange grove in a rich, deep, porous soil where the trees will grow strong and vigorous. Better never plant a tree than to put in heavy low ground, or where water can be reached within 3 or 4 feet of the surface. The orange must not at any time stand in water which in a very short time will cause the roots to die, and your tree will soon be beyond recovery.

The orange is sometimes root-killed by winter rains, although as a rule it is well on in the spring when the trees show the damage by turning yellow and limbs begin to die. Drainage, as I will hereafter state, will overcome this trouble by lowering the water table and keeping the roots dry.

Throughout the northern counties the soil is of a red, gravelly loam, particularly so in the foothill lands, and is heavily charged with oxide of iron, which gives our oranges a much richer color than those in many other parts of the State.

We are more inland and have a much higher temperature during the summer, which certainly ripens our fruit five or six weeks earlier than in the south.

The soil on the river bottom is sandy on top and adobe below, in many localities, which has a tendency to make the fruit coarse and thick-skinned, as well as much later than on the higher ground.

DRAINAGE.—A few words concerning drainage won't be out of place as drainage is of the utmost importance. It increases the fertility of the soil and promotes the health and vitality of the tree. In fact this cannot be too strongly impressed upon the minds of those who desire to make a success of orange culture. I have put in a great many drains in the past fifteen years, and it is really remarkable the improvement it has done for the trees. Not only that, but you can work your ground easier and during a longer period as the soil is usually loose and mellow.

It is too commonly regarded as sufficient to sink the drain merely out of the way of the plow, or at most out of the reach of the subsoil implements. But there are reasons, founded upon ascertained facts, why drainage systems should be laid deeper.

VARIETIES.—The oranges to be grown in the northern counties may well be headed with the Washington Navel, which may be styled king of all varieties on account of its earliness: it is certainly the leading variety for us to grow. The Jaffa is an early variety and is a great favorite with many. Other varieties which have taken leading positions among the growers are the Tangerine and Satsuma (Oonshiu), which are both early and very fruitful. There are other varieties grown, but really ought not to be encouraged as profitable trees in this section on account of their lateness.

PRUNING.—A few words in regard to pruning. If carefully watched in their growth, the trees will require but little pruning. Remove all crossed branches to prevent chafing, which might terminate in the dreaded "gum disease." Pruning is certainly overdone in a great many cases, especially by those who go about styling themselves pruners. They care little for the tree or its appearance, but have a great care for the dollars that are at sight.

Pruning regulates the form of the tree and causes it to become more fruitful with larger and better fruit. If practiced to a great extent the desired result is not obtained, for every tree must have a sufficient amount of foliage to absorb the flow of sap, otherwise it will send forth a great number of suckers, which are certainly injurious to the tree, and blossom buds are produced less abundantly, as the foliage is necessary to promote the health and vigor of the tree. On the other hand all dead and surplus limbs, which are only harbors for dirt and vermin, should be removed from the center to encourage fruitfulness in the center of the tree as much as possible. It should be borne in mind, however, that the citrus family has always a luxuriant and heavy growth of foliage.

As a conclusion to the above remarks the best rule that can be given is this: Watch your trees carefully, give them plenty of care and keep them clean, healthy and vigorous. The golden harvest will follow and with it success and profit.

## AGRICULTURAL ENGINEER.

### Mountain Roads.

#### NUMBER V.

JAMES W. ABBOTT in Year Book U. S. Dept. of Agriculture for 1901.

A preliminary survey of a contemplated line with some simple clinometer, determining the sidehill slopes for each 100 feet, and noting whether in solid rock or otherwise, will furnish the basis for an approximate estimate of the cutting, which is always by far the largest item of cost in a mountain road.

THE BEST PRACTICE IN CURVES.—The minimum curve allowable on mountain roads has the arc of a circle with a 30-foot radius for its outer edge. All sharp curves and their approaches from each direction should be level. This principle, of such great importance to the efficiency of mountain roads, is generally either not understood or ignored. A moment's reflection will convince anyone that safety demands it, and that on such sharp curves a four-horse or six-horse team, to pull its maximum load, must not have any impediment from grade, as the wheel horse does most of the pulling.

All curves on steep grades should be equated (the grade lightened) and the roadbed widened. No universal rule for this can be laid down, but the best practice demands it and good judgment in locating always considers it.

Where a road winds backward and forward up a hill in approximately parallel lines, the turns are called switchbacks. They are expensive and very undesirable. Where possible, they should be avoided, but when indispensable they come under the rule above laid down for minimum curvature and freedom from grade.

Wherever a bridge is approached by a curve its end should be flaring and the roadbed made wide and level. Curved approaches to bridges are, of course, very undesirable and should be avoided, if practicable.

STAKING OUT THE ROAD LINE.—Staking out of the road line must be done by a surveyor, with a transit and target rod, set each time at the height of the instrument (horizontal axis of the telescope). All grades can be determined with sufficient accuracy for wagon roads by angles of elevation from the horizontal. These angles are obtained from any table of tangents. An angle of elevation of 1 degree and 9 minutes gives a 2% slope; an angle of 2 degrees 52 minutes a 5% slope; an angle of 4 degrees 35 minutes an 8% slope; an angle of 5 degrees 43 minutes a 10% slope, and an angle of 6 degrees 51 minutes a 12% slope. An Abney level—also called a pocket altimeter—is a very valuable instrument in laying out a road line. With it one can make a preliminary reconnaissance without being burdened with a transit.

On sidehill grades we stake the outside of the cut at grade. Slope stakes must be set to determine where the inside line of the cut begins. These can be set with sufficient accuracy with a 12-foot straight-edge, a clinometer and a tapeline. An Abney level and a tapeline are better still. The surveyor can make himself a little table, which will show the distance from his eye to the foot of the slope stake for each five minutes difference in elevation registered by his Abney level for the various widths of cut to be used—one table for rock cuts and one for picking or plowing ground.

DETAILS OF CONSTRUCTION.—In constructing mountain roads a sidehill plow with reversible share is a sine qua non. The writer has seen six strong mules and four men working hard to run a furrow up hill, when two animals, attached tandem to a sidehill plow, and two men, could have done more work and with much greater ease. It is astonishing how rapidly a sidehill grade can be constructed with such a plow and a scraper. When the two lines of stakes are in—grade and slope stakes—you start right and you come out right. Your inside bank has the right batter and your road the full width you meant it to have. It is very common to see a contractor on a mountain road, who attempts to grade without slope stakes, find his roadbed too narrow. It is too late for him to use his plow, and he must widen out with pick and shovel, the last operation costing, perhaps, as much as the entire grading should have done if done rightly from the start.

SLIDE ROCK.—In the mountains we often find the hillside slopes covered with broken stone of various sizes. This we call slide rock. This slide rock may be very coarse and the surface extremely ragged, when it is called "heavy slide." It may be fine and bound together by soil, in which case it can be plowed. It may be fine and dry and run just like dry sand when one attempts to walk on it or otherwise disturb it; this is called "fine slide rock." To construct a road in coarse slide we build a retaining wall on the outside of the grade of large rocks weighing not less than seventy-five pounds each. We then shape our roadbed, making it as smooth as possible with the material at hand, and cover this surface with fine slide.

(TO BE CONTINUED.)



## Agricultural Review.

### ALAMEDA.

**NEW YEAR'S WATERMELON.**—Niles Herald: Wm. Barry brought a good sized ripe watermelon to this office Tuesday. It had been grown on his place and was picked about ten days ago.

### BUTTE.

**AN EX-SUPERVISOR RAISING CHICKENS.**—Chico Record: Joel Nelson is preparing to enter into the business of chicken raising on a large scale at his farm near Durham, and to that end has caused to be expended in the preparation for raising chickens about \$1500. He has provided buildings whereby he will be enabled to handle about 3000 chicks at one time. The brooder building is about 90 feet in length and will be heated by a hot water system. It is not a temporary affair, but a building that will stand for years. Yards for accommodating the chickens according to experienced fanciers are also provided. During the winter Mr. Nelson proposes to keep several incubators in operation. A correct record of the business will be kept, and the results of the first year's experience will doubtless prove of much benefit to others who may contemplate a variation in their method of farming.

**NORTHERN CALIFORNIA ORANGES.**—Oroville Register: Orange shipments by freight from Oroville have been up to date about 90 carloads. Shipments by express we have been unable to learn. From Palermo the shipments have been about 118 carloads, and from the Hearst spur about 130 carloads. To this is to be added the quantity shipped in less than carload lots. For Palermo the total will be about 275 carloads, and from Oroville, including express shipments, at least 100 carloads. This gives a total to date of 375 carloads.

### CONTRA COSTA.

**ALMOND GROWERS' ANNUAL MEETING.**—Antioch Ledger: The Contra Costa Almond Growers' Association held their annual session at Brentwood. There was a large attendance and harmony prevailed throughout. The following officers were elected for the ensuing year: President, John H. Trythall of Antioch; vice-president, Bert L. Norcross of Oakley; secretary, Richard J. Trembath of Antioch; executive committee, Amos M. Graves of Antioch, James O'Hara of Brentwood and Peter Heck. There are seventy-four members on the roll. It is the intention of the Association to build a warehouse and to that end a committee, consisting of James O'Hara, A. M. Graves and Thomas Murphy, was appointed to look into the matter and report at a future meeting. About 100 tons of almonds were sacked and sold during the past season. The financial affairs of the Association are in good condition.

### KINGS.

**SUCCESSFUL CREAMERY.**—Visalia Delta: The Kings county creamery, with its main factory and office at Hanford, is now building larger cold-storage rooms and arranging to increase the capacity of the factory all round. The management of the company has stated that it is his expectations to make at least two tons of butter every day after the enlargement is completed. The demand in the Los Angeles market for this particular brand of butter has become enormous.

### LASSEN.

**SUPPLY OF BEEF CATTLE.**—Lassen Mail: There are several farmers in this valley who are feeding beef cattle, and most of the cattle are in prime condition. From information obtainable we learn that there are about 3000 head being fed in this valley. At this end we learn that F. Hines is feeding 160 head, J. Cahlan 135, W. Brockman 80, C. Lawson 75, Al DeForest 160, G. DeForest 80, L. Winchester 80, J. Cooper 40, Masten & Ramsey 160, D. Ridenour 100 and G. Mapes of Tules 100. Many others have cattle whose names and the number they are feeding we cannot give at this time; but it is safe to say that there are 3000 in the valley.

### ORANGE.

**DEATH OF THE "CELERY KING."**—Daniel E. Smeltzer, known throughout the produce world as the "California Celery King," died in Los Angeles on the 24th ult. of nervous prostration, aged 49 years. Mr. Smeltzer came to California from Kansas City, Mo., about a dozen years ago, and has done more to develop and utilize the peat lands of this county than any other one man. His home was near Santa Ana, surrounded by a 400-acre celery farm. The celery shipments from the town of Smeltzer, this county, are now running twenty cars a day, and the total for the season will amount to 1200 carloads.

### SACRAMENTO.

**BOOM IN STRAWBERRIES.**—Record-Union: David Reese, who is familiar with strawberry culture, said: "There are between 500 and 600 acres of strawberries planted in the Florin district, about 400 acres of which will be in full bearing this season. In addition to this there is a very large acreage being leveled and prepared for planting this year, it being one of the best seasons ever known for preparing the land for planting. Few people know the extent of the strawberry business that is being done at Florin. Last season Florin shipped 80,000 cases of 15 pounds each, or about eighty carloads of strawberries. This coming season will add one-third or one-half to that amount. These berries are shipped to Oregon, Washington, Montana, British Columbia, Colorado, Utah and Nevada, besides all over our own State. Prices realized last year were very satisfactory."

### SAN BERNARDINO.

**STATE SUED ON COYOTE SCALP CLAIMS.**—Sacramento Bee: W. S. Hooper has filed suit in the Superior Court against the State for \$5310 on a great number of coyote scalp claims assigned to him from San Bernardino county.

**BIG CATTLE SALE.**—Los Angeles Express: H. G. Harvey of this city and S. E. Biddle of Hanford have purchased 10,000 head of cattle in Mexico for shipment to southern California. Part of the stock will be pastured near Chino, where feed is plentiful, and the rest will be sent to the Biddle ranch near Hanford.

**SPRAY RUINED THE ORANGES.**—San Bernardino Times-Index: There is a ten-acre orange grove at North Ontario which is reported to be bearing poisonous fruit. People eating the oranges are immediately effected with swollen lips and experience other unpleasant results. The cause is laid to a process of spraying the trees to kill pests. When the Horticultural Commissioners started out with their fumigating outfit the North Ontario man decided to dispense with their services and instead sprayed his own trees. The commissioners have refused to use that process in place of cyanide fumes, and the grower wished to experiment, with the result that he has lowered the price of the fruit on his ten-acre tract from \$1.80 to 60 cents a box. In Los Angeles county the commissioners used the spray extensively and as a result have lost to the growers at least \$200,000.

### SAN DIEGO.

**NEW EXPERIMENT STATION.**—Riverside Press: The land and water companies have set apart twenty acres at Calexico for an experiment station, and have put Mr. Daniel Nicoll in charge. The Government will furnish seeds and plants for the widest range of experiments and the settlers will benefit in the largest measure by the experiments. Tests will first be made of sorghum and Egyptian cotton. Mr. Nicoll is eminently qualified to conduct these experiments, and has made a thorough study of climatic conditions and plant life in southern California.

### SAN JOAQUIN.

**THE COX SEED CO. RAISES ITS OWN SEED.**—Stockton Independent: The Cox Seed Co. of San Francisco has commenced work on its seed farm in the Sargent tract and a new industry has been started in this county that promises to become famous throughout the United States, for the Cox Seed Co. is a world distributor of seeds, and its purpose is to establish one of the largest seed farms in the country, in the northwestern section of the county. The first tract leased for a term of years is a part of S. W. Newell's ranch and contains 500 acres. In time the company will increase its business and the seed farm will be enlarged to a highly cultivated tract of 1500 acres. The land leased for the immediate uses of the company was taken with the privilege of purchase at a stated price, and the lease covers a term of years at \$8 per acre, which makes it a fine venture for the Cox Co.

**HEAVY TRANSACTIONS IN POTATOES.**—A Stockton dispatch states that one of the largest purchases of potatoes made there by a single firm was recently completed and the tubers stored in a local warehouse. About 60,000 sacks were secured at much less than present prices, and quite a sum of money will be cleared up on the deal. Potatoes are selling at \$1 to \$1.15 on the river bank. The shortage of potatoes in the East and Middle States is the cause of the advances, and prices are expected to go still higher before the end of January, as California will begin shipping to the South and Middle West as soon as the supply in Colorado is exhausted. Owing to the high prices, the shipments from here the past three weeks have been very light. Some of San Joaquin county's potato growers have made fortunes this year and others have cleared up snug sums of money. O. Y.

Woodward and H. Voorman have made between \$75,000 and \$100,000 each. Among those who have cleared thousands are the Ennis-Brown Co., which farmed part of the Sargent tract; Wood, Curtis & Co., who had in a large acreage on Tyler island; Frank Draper and Hickson & Long on the Bradford tract; O. E. Anderson, Jake Sargent, Ralph Lane and George Thompson. A number of Chinese and Japanese also made large sums. "Potato Jim," who rents land 6 or 7 miles northwest of Stockton, is thought to have cleared between \$30,000 and \$40,000. George Shima, a Japanese who has been farming in this county for years, will make about \$40,000 after standing a loss of \$12,000, caused by potatoes on Staten island being flooded.

**THE COYOTE PEST.**—Lodi Sentinel: The farmers a few miles northeast of Acampo are complaining bitterly of the coyotes, which are greatly increasing both in numbers and in boldness. G. W. Woodson has lately killed four, and says that they are still very thick, and suggests that the only remedy at hand would be the renewal of the bounty for the thievish pest. "So bold have they grown," says Mr. Woodson, "that they will kill a large-sized pig, and chickens seem to be their favorite meat."

**MILCH COWS FROM NEBRASKA.**—Three carloads of milch cows reached Lodi last week from Nebraska for the Rosenbaum dairy farm near Terminous.

### SANTA CLARA.

**VINEYARDISTS INCREASING ACREAGE.**—San Jose Mercury: The indications are for a material increase to the vineyard acreage of the county the coming spring. A well known winemaker gives it as his opinion that the assured increase in vineyards will be at least 1000 acres, with a possibility of the amount being much greater. The winemen say that the prices are likely to continue for many years, owing to the constant decrease in vineyard area because of pests. They say that the new planting will not more than keep pace with the destruction of old vineyards. Resistant stock is being put out with excellent returns, but with the exception of this valley grape growers have not learned its true merits. The result is that the increase of vineyards, whatever it may be, is likely to be confined to this county for the greater part. This acreage may be larger than the first estimate. Around Morgan Hill and along the foothill districts there is much demand for grape lands. If they are all planted the increase will be material, but in any event it will not more than offset ravages of disease in other counties. Locally the prospects for viticulture would seem to be very bright as a result.

**PRUNES SELLING WELL.**—San Jose Herald: During the last four weeks the California Cured Fruit Association has sold between 800 and 900 cars of prunes at good prices, leaving on hand about 2000 tons. For this lot there is a brisk demand. "We could," said President Woods, "sell all the prunes we have three times over in a day, but shall delay further sales for about two weeks." The prunes are now selling on the 3½ cent basis for the crop of 1901, and on the 3 cent basis for the crop of 1900. Prices have been advanced from 2½ cents on old crop and 3 cents on new. A further advance is looked for.

### SANTA CRUZ.

**FRUIT NOTES.**—Watsonville Pajaronian: James Sheehy has, or soon will have, apple roots on exhibition at the Board of Trade rooms which very clearly show the superiority of the Northern Spy root for aphid resistance. While the Spy root is clean, its mate of other stock is covered with a mass of aphids.—The Bullene apple orchard, containing twenty acres, near Spreckles, has been sold for five years at \$2900 per year.

### SONOMA.

**TOBACCO CULTURE.**—Cloverdale Revue: The subject of tobacco culture is a question that is being considered by many of the farmers at Hopland. The question is not wholly problematical, as several tests have been made and with good success. Ahrens & Hartman of San Francisco, tobaccoists, are back of the proposition and they want to secure 150 acres to set out to tobacco. We also learn that several parties up Dry Creek way have leased land suitable for growing tobacco at the rate of \$20 per acre. Samples of cigars and also samples of tobacco made from the plant grown at Hopland are now on exhibition.

**SCISSORS IN A COW'S STOMACH.**—Sonoma Index-Tribune: The slaughterers employed by Henry Weber of the Central Market were surprised to discover a large pair of scissors in the stomach of a two-year-old heifer which they killed recently. The scissors were 5 inches long, but apparently did not interfere with the

digestion of "bossie," as she was sleek and fat and in prime condition. The scissors had been in the cow's stomach for a long time.

### TEHAMA.

**A NOTABLE SALE OF LIVE-STOCK.**—Red Bluff People's Cause: A notable sale of live-stock was made recently by D. S. Cone, who sold twenty one, two and three year old bulls from his Hereford herd to a representative of F. E. Wadsworth, the Siskiyou banker, who has a large stock ranch in Shasta valley. The bulls brought \$3000, or \$150 each. An agent of Mr. Wadsworth has purchased 5000 steers from Doc Evans of Gridley, paying \$50 a head, or \$250,000 for the lot.

**PURCHASES A BEST HARVESTER.**—Jno. Moran, who farms a 9000-acre field near Kirkwood, recently purchased a Best combined harvester to be ready for use for his next year's crop. The machine will be able to cut a 25-foot swath, has a 38½-inch cylinder, 6-inch wheels and is of 50 H. P. The engine of this machine will be used during the winter with the gang plows, and will take the place of thirty mules.

**TURKEY SHIPMENTS.**—Red Bluff News: The shipments of turkeys for the Christmas season from Corning were not nearly as heavy as expected, and fell far short of the Thanksgiving movement. The shipments for the Christmas week did not reach over twelve tons, while those for Thanksgiving were over eighteen tons.

**THE BEET INDUSTRY.**—Jas. Finnell is still deeply interested in the beet sugar proposition and thinks that eventually a sugar factory will be established in this county. He says they are planning now to raise money with which to build the factory, and he thinks that the well-to-do people of the county might help out the project by taking stock. His 6000-acre beet field is being carefully prepared for next season's crop.

### TULARE.

**ALAMEDA SQUIRREL SCALPS NOT GOOD IN TULARE.**—The Supreme Court has decided that John A. Howard of Visalia must be punished for attempting to obtain the bounty for dead squirrels offered by Tulare county on tails imported from Alameda county. Howard was tried on the charge of attempting to obtain money by false pretenses, and was convicted. He appealed, but the Supreme Court holds that his punishment is just.

**DAIRYMEN SETTling UP TULE RIVER COUNTRY.**—Visalia Times: The price of land and hay in southern California has caused an influx of dairymen to the Tule river country in the vicinity of Woodville. They find plenty of land in this county which can be bought all the way from \$10 to \$25 per acre, which, with the addition of a pumping plant, is just as well adapted for their business as land in Los Angeles county that is held at prices ranging from \$150 to \$300 per acre. The time is near at hand when the dairy business will be second to no other industry in this county. The fact that there is an abundance of water in the ground that can be utilized by the use of pumps, which can be operated cheaply, eliminates the only drawback that heretofore deterred farmers from engaging in dairying, namely, the lack of water for irrigating purposes when needed.

### YUBA.

**TURKEY SHIPMENTS.**—Marysville Appeal: The shipment of turkeys for the holiday trade fell a little short of expectations here. The total shipped from here was 13,625 pounds. Owing to the rather low prices several are withholding their turkeys hoping that the price will advance. The total shipments from here (including those yet to be shipped) will approximate 40,000 pounds for the season.

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**Caustic Balsam**  
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## FRUIT MARKETING.

### The Year's Work of the Fresh Fruit Exchange.

TO THE EDITOR:—Seemingly it should interest your readers to learn definitely what was undertaken by the California Fresh Fruit Exchange, and what was accomplished, during the deciduous fruit season just ended.

A few words on the subject and the methods in use in previous years would appear necessary in order to bring more clearly into view just what was undertaken. The earliest shipments of deciduous products from California to the Eastern markets were made very nearly in complete ignorance both of the obstacles to be encountered and the requirements of the markets sought to be invaded. It quickly followed that many of the pioneer firms were crowded to the wall and the business was left entirely in the hands of the commission agencies. These latter were out for "all there was in it," and soon great hardships were visited upon the poor fruit growers. In some districts these burdens bore so heavily upon the farmers that they have worked their orchards over from shipping to drying and canning varieties; in other localities bankruptcy stares the community in the face.

LOOKING BACKWARD.—To avert these evils efforts have been made at various times to unite the fruit growers in co-operative movements, with the object of handling their product themselves. The most noteworthy of these, the California Fruit Union, "died aborning," for its directors, on the very day of its organization, employed the (at that date) largest commission house in the business as its selling agent in the East. The result followed which any one half wise could have foretold. Then an era of "independent" co-operation followed, during which each little shipping point had its "co-operative association," which flourished for a short while and then disappeared. While these co-operative (?) associations were in the field the worst effects of disjointed action manifested themselves. Each station on the lines of the overland railways that could muster carload lots of fruit sent its little argosy eastward and sought to cut the market from under any and all others that were there before them in the business of handling our California fruits. Did this tend to make prices remunerative to the grower? Echo answers, "Did it?" The worst result of all these years of mismanaged shipments is the feeling on the part of the buyers at the other end, and also of the large commission firms which have remained in the field and grown rich at the expense of the fruit grower, that the latter has no rights which the former are bound to respect, and that if there are any rights the farmer is so much of a "chump" that he dare not maintain them.

A NEW RICHMOND.—Now enters upon the field the California Fresh Fruit Exchange, with the honest ambition to serve the fruit grower by affording him a means of getting his fresh fruit to market and securing an honest sale of the same and an honest accounting of the returns. It is molded upon the plan of the Southern California Fruit Exchange, and is, in fact, the child of that parent. One of its chiefest objects is to unite these various "little" co-operative associations throughout the State under one control, much as the several States of our Union are under the control of the Federal Government. Each preserves independence locally, but none has any say as to the disposition of its cars when once they are loaded. By reason of this provision there is no clash of the fruit from one district with the fruit of other sections, and the tendency is to hold up the Eastern prices and not to break them down. No attempt has been made to get a certain specified percentage of the product, but such fruit

as has come to the Exchange has been taken care of, regardless of how much more there was to be handled by other agencies. It is, of course, our ambition to prove so worthy that the growers will eventually all, or nearly all, come under the shadow of our wings. When such day arrives, and the bulk of the product is sold through the Exchange, there will be prosperity for the fruit grower throughout the State.

LAST SEASON'S RESULTS.—Now, as to what was accomplished. Local associations were formed at Newcastle, Penryn, Loomis and Placerville, but the work was begun so late that there was not time enough in which to perfect the plans before actual shipments of fruit began, so that at Loomis and Penryn alone were the effects of our work shown to their full extent. Our Exchange was not incorporated until May 1, but in the selection of Mr. A. R. Sprague as general manager we were extremely fortunate, and to his energy and ability we owe most of the success of the season's operations. Affiliating, as we did, with the Southern California Fruit Exchange, we were able to employ the tried and experienced agents of that Exchange, and found ready to our hand the machinery needed for the selling of our shipments. These agents were on salary and worked for the interest of the grower, and not for the filling of their own several pockets. The prices obtained were in nearly every instance higher than those obtained by our competitors, and the average returns for the season so much better than those who stood by the Exchange from the opening to the closing of the season cannot be tempted to desert our ranks.

A DIVIDEND TO MEMBERS.—A part of the plan of the Exchange is to return to the membership any surplus accruing from the season's business. This year these benefits were confined to Loomis and Penryn, chiefly, and to Placerville in a slight measure. The Exchange sent eastward a total of 201 full cars and 50 partial carloads. A gross return was secured of \$208,159.50, or about \$1000 per car.

From this were paid to growers for net returns.....	\$ 97,566 06
For freight, refrigeration and all expenses of shipping and selling.....	102,869 06

Total.....	\$200,425 12
Leaving a surplus of.....	7,733 38

Out of this surplus there were paid all the expenses of the Exchange, and also to the Loomis local association a rebate on account of loading charges and profits accruing from purchase of material, box lumber, paper, nails, etc., of about \$2900; to Penryn local association about \$800, and to Placerville about \$80. This \$3780 (in the nature of a dividend to our members) represents the profits on about 110 carloads of fruit shipped from the three points above named. One may imagine from these figures what enormous sums are pocketed by the regular commission houses, when we reflect that they have handled between 5000 and 6000 carloads each year, as against our 225 cars. Is there not enough reason right here for abandoning the old methods of selling your fruit and at once joining the California Fresh Fruit Exchange? Checks for as much as \$200 each were handed to some of the members of the Loomis local association after all their fruit had been paid for, these checks being an actual dividend over and above the "net proceeds" of their fruit shipped through the Exchange.

No losses were incurred on account of bad debts or dishonest agents, and the California Fresh Fruit Exchange at the end of the deciduous fruit season owed not a single dollar, and had a large sum in the bank to its credit. It is now engaged in shipping the oranges of northern California to the Eastern markets in connection with the Southern California Exchange, and can point with confidence to its achievements the past season as an earnest of what it will do in the season of 1902.

T. W. MADELEY,  
Sec. California Fresh Fruit Exchange.  
Sacramento, Cal.

# \$5,000.00

In final disposition of the persistent jugglery of names by a would-be competitor in such regard we offer Five Thousand Dollars to be divided in equal amounts of One Thousand Dollars each between the State Experiment Stations of Wisconsin, Minnesota, Vermont, Ohio and Cornell University, if the DE LAVAL CREAM SEPARATORS did not receive the GRAND PRIZE at the PARIS EXPOSITION; provided the concern which has indulged in so much unscrupulous advertising in this connection will within ten days deposit a similar amount, to be used in like manner, with Major Henry E. Alvord, Chief of Dairy Division, Department of Agriculture, Washington, D. C., if the De Laval machines did receive such an award,—decision in the matter to be left to Major Alvord, who was in Paris in an official capacity and who is undoubtedly familiar with the facts.

## TESTS OF SEPARATORS.

It being agreed and a part of the understanding that such amounts shall be used by the various Experiment Stations named in the conduct and publication during the year 1902 of thorough practical-use tests of all makes of CREAM SEPARATORS or other creaming devices which may choose to enter same.

### The De Laval Separator Company.

New York, Jan. 2, 1902.

# \$1,000.00

We offer one thousand dollars to be given in premiums on Butter at the next Annual Meeting of the Vermont Dairymen's Association if the "Societe Anonyme Separator" did not exhibit a Radiator at the Paris Exposition, 1900; and provided the DeLaval Separator Co. will give the same amount if the "Societe Anonyme Separator" did exhibit a Radiator there.

# \$1,000.00

We offer one thousand dollars to be given in premiums on Butter at the same meeting as stated above if the Aktiebolaget Separator did not have a large exhibit at the Paris Exposition, 1900, and did not distribute circulars in its own name; and provided the DeLaval Co. will give the same amount if the Aktiebolaget Separator did have such an exhibit, and distributed such circulars.

# \$1,000.00

We offer one thousand dollars to be given as above if the statements given below of the work of the U. S. Separator and the DeLaval Separator in the Model Dairy at the Pan-American are not stated as given by the Superintendent of the Model Dairy, viz:

Average of tests of DeLaval Separator, .0172

Average of tests of United States Separator, .0138

and provided the DeLaval Separator Co. will give the same amount if those statements were not furnished by the Superintendent of the Model Dairy.

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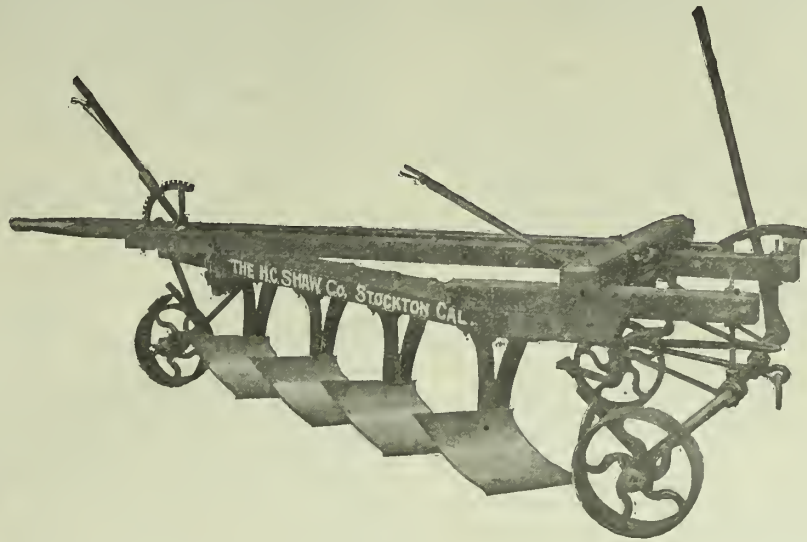
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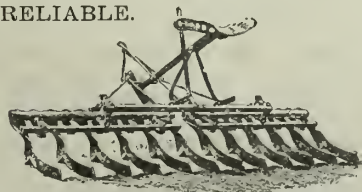


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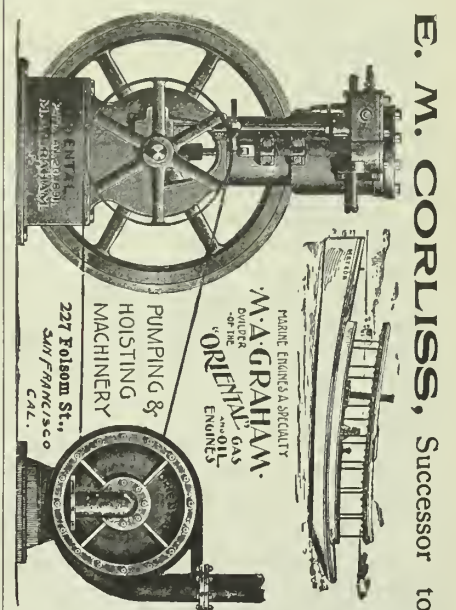
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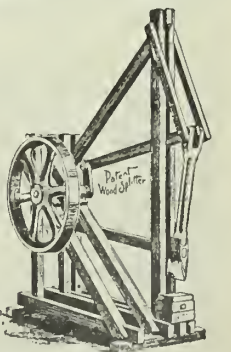


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## THE HOME CIRCLE.

Dear, Unselfish Dan.

'Most every one that knew our Dan Agreed he was the kindest man They ever see. He had the knack Of takin' on his own broad back The burdens an' the slaps an' pokes Belonged by right to other folks. If anyone was in distress An' went to Dan, he'd say: "I guess We'll pull you out all right; let's see, Suppose you leave all that to me."

Was nothin' finer than the way He cared for poor old Uncle Jay, Who was the most unlucky han' For havin' trouble with his lan' 'Bout taxes, or the early spring Plowin', or some other thing That plumb upst the poor old man. Then, in the nick o' time, our Dan Stops in, and says, "Oho!" says he, "Suppose you leave all that to me."

It got to be that Uncle Jay He couldn't git along no way Without our Dan, an' our Dan he Jest cared fur him unselfishly. An' when the old man come to die Our Dan, o' course, was right close by. Says Uncle Jay: "I'm worrit, Dan, 'Bout what's to come of all my lan' An' all my money out at loan, An' in the bank, when I am gone." Thon Dan he ups an' says, says he: "Suppose you leave all that to me."

## A Balanced Ration.

"John," said Mrs. Carter, "I want to have a talk with you."

"All right, my dear," responded Mr. Carter.

"I want us to begin our housekeeping right," continued the lady. "From a hygienic standpoint, I mean. Of course, at all those hotels, we could not help ourselves, but in our new home we can live as we please."

"Well, we will," answered Mr. Carter. "The plumbing is exposed, the ventilation is all right and everything in the house is according to the most approved hygienic standard. There is no reason why we should not live right."

"Yes, I know; but I was not thinking of the house. I was thinking of the diet."

"Oh, you'll arrange that all right, I'm sure," said Mr. Carter, cheerfully. "I am going to try to, but you must help, too. You see, John, most people waste a large part of what they spend by injudicious purchases."

"I believe that," agreed Mr. Carter heartily.

"Yes," went on Mrs. Carter, waxing eloquent, for this was her particular hobby; "not only by injudicious purchases, but by an almost entire absence of any knowledge of the relative nutritive qualities of various food products, and by processes of cooking and serving which very much reduce the value of the food. I want us to live well, enjoy some luxuries and save money on the same amount that most people practically throw away."

"You're a sensible little woman," and Mr. Carter kissed her; "but may I ask how all this is to be done?"

"Well, you see, John," and Mrs. Carter smoothed his coat sleeve with a satisfied air, "after we became engaged I took a regular course at the cooking school and graduated with high honors. They said that I knew more of the relative value of foods than any graduate they had ever had."

"I can well believe that," answered the new husband fondly.

"So," went on the wife, shaking her head at the compliment, "in making out my dietary for the week I know that a man's rations are scientifically enough when they contain 3500 calories a day. Therefore, it is a simple arithmetical calculation to compute how many calories are necessary for the week and buy the food accordingly, so that there is no waste."

"But what in the world is a calorie?"

"A calorie is a unit of heat estimated necessary to raise the temperature of a pound of water four degrees Fahrenheit, and the unit of energy

adopted in estimating the full value of food," responded Mrs. Carter glibly.

Mr. Carter drew a long breath, and still looked bewildered, but brightened visibly as the idea struck him.

"All right, my dear. You go ahead and attend to the calories. I'll eat them if they are good."

"And you won't go to any of those horrid places down town for lunch, will you?"

"No, Nellie; not if you have calories at home."

"Now promise, John," pleaded Mrs. Carter, ignoring the ignorance conveyed in his remark. "I don't want your digestion ruined, so promise that you will eat only my home cooking."

And the misguided man promised. So the Carters began their housekeeping.

"Nellie," said Mr. Carter, some few weeks after this. "Do you know that we have not had fried potatoes since we have been keeping house. I am very fond of fried potatoes for breakfast."

"Fried potatoes!" ejaculated Mrs. Carter. Well, I should say not. They are one of the most indigestible things that one can take into the stomach."

Mr. Carter felt an inward protest rising, but stifled it as he remembered his promise to stand by his wife on the diet.

"You are not taking any of that olive oil, John," continued his wife. "It is necessary for the system to eat half a pound of butter and an equal quantity of olive oil a week. You don't do either."

"I don't like olive oil, and I never did eat much butter," returned Mr. Carter, patiently.

"I am afraid that you are a little inclined to self-indulgence, John. You must break that up. One can, if one will bring one's will to bear on the subject."

Mr. Carter laid down his knife and fork and opened his lips to reply. One look at the pretty face of his wife, however, made him change the sarcastic remark to the good-humored one of:

"Well, perhaps I am. I will be a different man, I expect, after I have you to guide me for a while."

Mrs. Carter nodded acquiescently.

"John," she cried, some hours later, "what are you doing?"

"Getting a drink, my love," returned John, mildly, pumping a bucket of water from the well.

"But you must not drink that water; don't you know that is full of bacteria?"

"Then what am I to drink, Nellie? I can't go without water!"

"Of course not. Here is some that I have boiled. I boil all the water that we drink."

"Phew!" he exclaimed in disgust. How flat it tastes. Is that what is the matter with the water? I wondered why it tasted so. I'll just take a good drink fresh from the well."

"Oh, John, dear," cried Mrs. Carter, tearfully, "you musn't. Indeed you musn't. It is full of bacteria."

"I guess they won't hurt me," laughed John. "I've always drank it so."

"Don't do it! Please don't, John! For my sake," pleaded the wife. "It is so dangerous."

"Well, put some ice in this then, and I won't." He was a new husband, remember.

"Ice! Why, what would be the use of boiling it if we were to put ice in it? Ice is full of microbes."

Mr. Carter drank the boiled water in silence, and then went into the house, and read the paper until dinner was ready.

"What cut of beef is this?" he asked, as he prepared to carve the meat. "It doesn't look like a roast."

"It isn't. It's the neck. I find that I can get more food value for less money from the neck than from the rib. For instance, 10 cents' worth of the neck of beef will give me .36 of a pound of protein and 1825 calories; whereas, the same amount spent for the rib will yield only .13 of a pound of protein, and 1449 calories."

Mr. Carter groaned. He had been accustomed to dinners of soup, roast with all the accessories, salad and a

corresponding dessert. The rigid regime of Mrs. Carter, while it might be hygiene, was far from satisfying. In fact, a feeling of goneness was beginning to be his chronic condition.

"Then," went on Mrs. Carter, not noticing the groan, "I add potatoes, bread and fruit for the carbohydrates, and we have a meal perfect in food value, containing protein, fat, starch and sugar. All for the same money that a roast would have cost us," she wound up triumphantly.

"Well, for to-morrow," said Carter, "let's have roast pork with potatoes, and cherry pie."

Mrs. Carter stared at him a moment, and then said pityingly: "John, you are as ignorant as most people concerning food values. It won't do, my dear."

"But why won't it?" asked Mr. Carter, a little savagely. "I like it."

"You promised me, John, that you would stand by me in this. I think that you ought to when it is as much for your good as it is mine. Roast pork and potatoes contain five times as much carbon as you need. It would make you go at double speed at the expense of your nerves and tissues. As for cherry pie,"—she made an expressive gesture, as if it were not worth mentioning, and continued—"you will soon get over the yearnings of falsely educated appetite, and then you will be all right. I am afraid that you have been improperly brought up, John."

Mr. Carter glared at her angrily, and threw down his knife and fork with a bang.

"If you mean, madam, in regard to calories, proteins and all the rest of it, yes, I was."

"Oh, John!" Mrs. Carter rose from the table with her handkerchief to her eyes. "You are cruel when you know I'm doing the best I can."

What could he do! He had not been married long, and was not proof against her tears. He arose from the table, took her in his arms, begged forgiveness and promised to eat anything and everything she would give him, if only she would smile. They made up, of course, and Carter bore himself heroically for six months through a dietary that tabooed pie and was arranged according to food values. At the end of that time he found that he had grown thin and pale. His appetite had left him entirely, and several times he caught himself reckoning up the per cent of protein and number of calories contained in the pieces of meat which hung temptingly in front of the butcher's. He stopped drinking water away from home, and was haunted by the fear of bacteria.

"See here, Carter," said a friend, meeting him one day on the street, "what's the matter? You look like a shadow."

"I don't know. Just a fancy," returned Carter, too loyal to his wife to tell the cause.

Carter went home feverish. Much to his wife's alarm he did not eat a mouthful for supper. Finally he went to bed and fell asleep. While he slept he dreamed he was in an immense dining-room. Great roasts of beef and pork flanked by steaming vegetables loaded the tables. Pies of mince and cherry were on the buffets; fruits, salads, water with huge chunks of ice floating in it; milk, cooled also by ice; everything that would appeal to the palate was there in tempting array.

Carter's mouth watered; but alas! when he approached the meats proteins and calories appeared to rise from them. Carbohydrates reared great heads from fruits and vegetables; bacilli jeered at him in the ice water; microbes looked stealthily out from the milk. A feeling of fierce anger seized hold of him. Was he to starve because of these creatures? Well, let them do their worst. A drink he would have in spite of them. Catching up a cup, he started for the water. Instantly bacilli, microbes and bacteria surrounded him. With beating heart he walked boldly among them. Suddenly an enormous bacillus that he had not seen before started toward him. Afrighted, he dropped his cup, and tried to run; but the monster was upon him before he could take

a step. Its huge body covered him; its hot breath was upon his face; its fangs were creeping closer and closer to his throat, when—Carter gave a shriek and sprang from the bed.

"Why, John! What is the matter?" asked Mrs. Carter, sitting up.

"Matter!" growled Carter, picking himself up from the floor, where he had landed. "Matter enough, I tell you. To-morrow begins a new state of things in this house. I'm going to live decently if I have to eat all the bacteria in the world. Calories and all the rest of them have got to go. They have had their innings. Now comes mine. Do you hear, Nellie?"

"Yes, John," replied Mrs. Carter, meekly; she had been married long enough to know that when Carter used that tone things must go his way.

The next day at dinner the following was the bill of fare:

Soup.  
Roast pork with potatoes. Apple sauce.  
Onions, beans, tomatoes, peas, corn.  
Cherry, mince, apple pie.  
Ice Water.

And Carter was happy.

## Suggestions as to Eating.

You should avoid eating immediately after a strong corporal or mental exertion, says the Kneipp Water Cure Monthly. You may thereby interfere considerably with your digestive apparatus. Strong emotions, fear, excitement, sorrow and fright prevent the secretion of gastric juice, and it is therefore advisable to abstain from eating immediately after any such occurrence.

After your meal you should avoid any strong corporal exertion and also abstain from any mental strain.

It is very advisable to have a short after-dinner nap, if possible. A healthy person always has an inclination to close his eyes and sleep a little after dinner, writes Dr. Weil, and if you observe the dumb animals they do the same.

But this after-dinner nap should not be extended too long—never longer than an hour—otherwise, instead of being refreshed thereby, one will be tired and lazy.

To persons who suffer from stomach complaints and disorders, it is not advisable to take an afternoon nap. They generally, if they have indulged in an after-dinner nap, feel out of sorts, and are bad-tempered in consequence. These sufferers should always remember the old, well-known saying:

After dinner, as a rule, stand still,  
Or walk a thousand paces at your will.

To these patients, however, a short nap before dinner is very advisable.

It is of utmost importance not to retire to bed immediately after supper. At least two to three hours should elapse before going to bed. The more copious the last meal, the longer time one should wait before retiring.

Never compel or force any one to eat. There is no food in the whole world which is just as tasteful to everybody or that will agree equally well with every one.

With children the following rule should be observed: Never force a child to fill its stomach or satisfy its hunger with any food which it dislikes, but only an attempt should be made to get the child gradually used to the food in question.

For this purpose it is not necessary that the child should eat large quantities of this food, but a little will do.

The old saying, "The child should eat that which comes upon the table," should be altered thus: Let the child taste of everything which comes upon the table, but let it satisfy its hunger with the food which it likes.

Mrs. Noozy—I think it's the most ridiculous thing to call that man in the bank a "teller."

Mrs. Chumm—Why?  
Mrs. Noozy—Because they simply won't tell at all. I asked one to-day how much my husband had on deposit there, and he just laughed.—Philadelphia Press.



### Presidential Poetry.

The superintendent of the Columbus, Ohio, schools has arranged a jingle on the Presidents which runs as follows:

First, stands the lofty Washington,  
That noble, great immortal one.  
The elder Adams next we see,  
And Jefferson makes the number three.  
Then Madison is fourth you know,  
The fifth one on the list, Monroe.  
The sixth, and Adams comes again,  
With Jackson seventh in the train.  
Van Buren eighth falls into line,  
And Harrison makes the number nine.  
His death gives Tyler, tenth, a turn,  
While Polk's the eleventh, as we learn.  
Death comes to Taylor, twelfth in race,  
And Fillmore takes the empty place.  
The fourteenth, Pierce, is next elected,  
Buchanan, as fifteenth chief selected.  
In war time Lincoln rules the nation,  
And, sixteenth, holds this highest station;  
But, lo! the hero's stricken dead,  
And Johnson, seventeenth, serves instead.  
The eighteenth, then, is Grant, you know,  
And nineteenth, Hayes from Ohio,  
Then comes another Buckeye son,  
Garfield, the second martyred one,  
Whose term was filled by Arthur through,  
When Cleveland comes as twenty-two.  
After Harrison as twenty-third  
Cleveland once again is heard.  
As twenty-fifth, McKinley great,  
The third to share the martyr's fate.  
As, twenty-sixth, while grief is felt,  
We hail the gallant Roosevelt.

### The Curious Small Boy.

One morning recently a lady accompanied by her son, a very small boy, boarded a car. The woman bore a careworn expression, and many of the rapid-fire questions asked her by the boy were either unheeded or answered by unconscious sighs.

"Ma," said the boy, "that man's like a baby, ain't he?" pointing to a bald-headed man sitting in front of them.

"Hush!"

"Why must I hush?"

After a few moments of silence: "Ma, what's the matter with that man's head?"

"Hush I tell you. He's bald."

"What's bald?"

"His head hasn't any hair on it."

"Did it come off?"

"I guess so."

"Will mine come off?"

"Some time, maybe."

"Then I'll be bald, won't I?"

"Yes."

"Will you care?"

"Don't ask so many questions."

After another silence the boy exclaimed: "Look at that fly on that man's head!"

"If you don't hush I'll whip you when I get home."

"Look! there's another fly. Look at 'em fight; look at 'em!"

"Madam," said the man, putting aside a newspaper and looking around, "what's the matter with that young hyena?"

The woman blushed, stammered out something and attempted to smooth back the boy's hair. The fat girl in the next seat was getting dangerously red in the face.

"One fly, two flies, three flies" said the boy, and then he turned to see what was ailing the fat girl.

"Here, you young hedgehog," said the bald-headed man, "if you don't shut up I'll have the conductor put you off."

The poor woman not knowing what else to do, boxed the boy's ears, and then gave him an orange to stop his tears.

"Ma, have I got red marks on my head?"

"I'll whip you again if you don't hush."

"Mister," said the boy, after a short silence, "does it hurt to be bald-headed?"

"My boy," said the man, "if you'll keep quiet I'll give you a quarter."

The boy promised and the money was paid over.

The man took up his paper and resumed his reading.

"This is my bald-headed money," said the boy. "When I get bald-headed I'm going to give boys money. Mister, have all bald-headed men got money?"

The annoyed man threw down his paper, arose and exclaimed: "Madam,

hereafter when you ride in the cars leave that young gorilla at home or muzzle him. I always thought that the old prophet was very cruel for calling the bears to kill the children for making sport of his head, but I am now forced to admit that he did a Christian act. If your boy had been in the crowd he would have died first. If I can't find another seat in this car I'll take the next one. Good day, ma'am!"

"The bald-headed man is gone," said the boy, and as the woman leaned back a tired sigh escaped her lips. — St. Louis Republic.

### Correcting the Clock.

W. S. Harwood tells in the January St. Nicholas what pains are taken to keep observatory clocks in time with the stars.

The clock was set the night before by a star when it crossed the meridian; but, for one reason or another, it may have lost or gained the fraction of a second. The observer at the eye piece of the telescope watches the oncoming star with the very closest attention. The instant it comes into his field of vision, just as it begins crawling across the wires, he gives a squeeze to the telegraphic key. At the moment of this squeeze the fountain pen, attached to the key by the wire, gives a tiny jump and makes a slight bending in the line. As the star crosses each wire the observer presses the key, so that there are eleven indentations made as the star crosses the field and passes out of sight on its celestial way. It has not been stopped a fraction of an inch in its journey through space, but the observer has timed it in transit, and, no matter how fast it has been fleeing through the heavens, it has yet been closely watched by the man at the telescope until he could record its movements. As the star passed the sixth wire the pressure for that line, its meridian line, registered the precise fraction of a second at which the star crosses the line. Then, as the clock has been marking its own time off on the cylinder second by second, the observer compares the time the clock has been making with the indentation the instrument recorded as the star crossed the meridian. Thus he can tell to the fractional part of a second the gain or loss in the time of the clock, and it is readjusted, or "set," as we say, to the unvarying time of the star.

### The Three Ages of the West.

Twenty-five years ago, says Emerson Hough in the January Century, potatoes were so high in price in certain towns of the Rocky mountains that the merchants handling them often reserved the right to retain the peelings, which, in turn, were sold for planting purposes, the eyes of the potatoes thus having a considerable commercial value, obviously in proportion to the distance from the nearest railroad or steamboat line. This situation could not endure forever. There must come a day when we could afford to throw away our peelings, and throw them away cut thick and carelessly. Equally true is it that the time is coming in America when we shall gather up our potato peelings and cherish them. There you have the three ages of the West.

Another instance of changed standards in the West may be seen in the revolution as to petty prices. Up to twenty years ago, in most Rocky mountain communities, the quarter dollar was the smallest coin in circulation. With the railroads came the dime, the nickel, and at last the penny; but they came to a West that was no more.

Hewitt—I believe that the office should seek the man, not the man the office.

Jewett—So do I; I live in a country town where there's no rural delivery.—Judge.

"Wouldn't we be surprised if we could see ourselves as others see us?"

"Yes; but the others would be surprised, too, if they could see us as we see ourselves."—Philadelphia Press.

### From "Paracelsus."

Truth is within ourselves; it takes no rise  
From outward things, whate'er you may believe.  
There is an inmost center in us all,  
Where truth abides in fullness; \* \* \*  
\* \* \* and to know  
Rather consists in opening out a way  
Whence the imprisoned splendor may escape  
Than in effecting entry for a light  
Supposed to be without. Watch narrowly  
The demonstration of a truth, its birth,  
And you trace back the influence to its spring  
And source within us, where broods a radiance vast,  
To be elicited ray by ray, as chance shall favor.  
—Robert Browning.

A YOUTH went forth to serenade  
The lady he loved best;  
And by her house at evening,  
When the sun had gone to rest,  
He warbled until daylight,  
And would have warbled more,  
But morning light disclosed the sign  
"For Rent" upon the door.

Auntie—Do you like school, Tommy?  
Tommy—I like Sunday school best.

Auntie—That's a good little boy.  
And why do you like Sunday school best?

Tommy—'Cause it only comes once a week.—The Australasian.

### DOMESTIC ECONOMY.

#### Domestic Hints.

**CREAMED CORN.**—Open a can of sweet corn and pour the contents in the blazer, place it over the lamp, add one tablespoonful of sugar, a little white pepper and one cup of milk; cook five minutes; mix one-half tablespoonful of flour, stir into the corn, add one-quarter teaspoonful of salt; cook three minutes and serve.

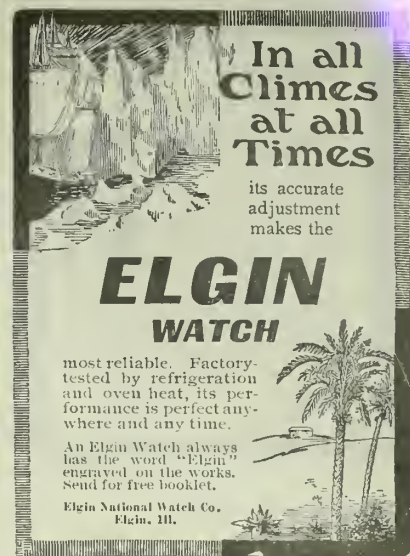
**CREAMED OYSTERS.**—To one-half teaspoonful of butter melted in a saucepan add one heaping tablespoonful of flour. Cook a few moments and stir in gradually one cupful of hot milk. Season with salt and pepper. Wash and carefully pick over one pint of oysters, boil them in their own liquor, then drain and add to the cream. If necessary, thin with a little strained oyster liquor.

**TOMATO SOUP.**—Boil one can of tomatoes fifteen minutes with one bay leaf, one stalk celery, and half a small onion. Strain, and add one quart of stock, and bring again to boiling point. Season with salt, pepper and one tablespoon sugar. Just before serving stir in one-fourth teaspoon soda. If desired the soup may be thickened by stirring in one tablespoon flour rubbed smooth with one tablespoon butter before adding the soda.

**COCOANUT PIE.**—One cup of freshly grated cocoanut, one cup of sugar, three eggs, half a lemon, juice and grated rind, one-half cup of cream, one-half cup of butter and one-half cup of cocoanut milk. Beat butter and sugar to a cream, add other ingredients, the yolks of eggs beaten very light with the cream, the lemon juice and rind, and lastly the whites of eggs beaten to a stiff froth. Line a dish with puff paste, pour the mixture in and bake in a moderate oven three-quarters of an hour.

**SOFT NOUGAT.**—Beat the whites of four eggs to a very stiff froth; pour into them, beating all the while, one pound of hot strained honey. Then add slowly one pound of sugar that has been boiled with half a cupful of water until, when dropped into cold water, breaks apart in the fingers. Add one pound of sugar that has been boiled according to directions for glazed fruit. Add one pound of blanched almonds, and pour at once into shallow pans that have been lined with rice paper. Cover the top with rice paper, and cut into strips the width of the pan and one inch wide. It requires two people to make soft nougat.

**CHICKEN A LA NEWBURG.**—Cut the meat of a cold boiled fowl in fine pieces. Melt together one tablespoonful flour and one tablespoonful butter. Add one



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pint good stock (made from bones of chicken) and boil a few minutes with two slices lemon peel, a morsel of mace, and a wine glass sherry or white wine. Strain and pour it over the chicken. Let all heat together. When hot remove the chicken to a hot dish and thicken the gravy with one egg beaten up with one wine glass cream. Heat once more, but do not boil after adding the cream. Pour over the chicken and serve hot.

#### Hints to Housekeepers.

A raw potato is an excellent cleanser. It will remove stains from the hands, and also from woolen materials.

A candle may be made to fit into any candlestick if it be dipped in very hot water. This will so soften the wax that it may be easily pushed into a candlestick which would otherwise be too small for it, and it will be neatly and firmly fixed there.

An easy way to clean knives is to use a small piece of old brussels carpet, sprinkled well with either bath brick or emery powder, and slightly moistened with methylated spirit. Double over and rub the knives backward and forward, using the left hand to steady the carpet.

An attractive way to serve bananas is to cut four or five of them into the thinnest slices possible and pour over them the juice of one lemon. Add three-quarters of a cupful of sugar and set away in a cool place for an hour. Then add two cupfuls of ice water and a little of the lemon peel and freeze in an ice cream freezer.

Rice stuffing for roast chicken or turkey is recommended as preferable to the usual breadcrumbs. To prepare it, brown one chopped onion in a tablespoonful of butter and mix with it four cupfuls of cold boiled rice and one cupful of breadcrumbs that have been moistened in one cupful of milk. Season with sage, parsley or other sweet herbs as desired. Add half a pound of sausage meat or finely chopped salt pork and salt and pepper to taste.

The real Waldorf salad is made as follows: Pare and core two large, tart apples and cut into dice half an inch square; cut up an equal quantity of blanched, crisp celery and mix with the apples; add a little salt, sprinkle lightly with French dressing and then mix with mayonnaise. Do not let stand, but serve at once in cups formed of crisp lettuce leaves. Chopped English walnuts may be added to this salad, or make a salad of equal quantities of orange dice, nuts and celery and serve in the same way.

Fruit stains on linen can, if attended to at once, be removed by pouring boiling water through. If they have dried, dip them before washing in a solution of chloride of lime and water. Leave them in this, rubbing often to see if the stain has gone, then rinse in several lots of water. The best plan is to buy half a pound of chloride of lime, put it into a bottle with a pint of water, and, when needed, add one pint of water to each tablespoonful of the mixture, adding a little more if the stains will not come out. Lime has to be carefully used or it will burn holes.



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## AGRICULTURAL SCIENCE.

### Scientific Agriculture in the Philippines.

As a neighbor of ours, as a relative by marriage, we take peculiar interest in the Philippines and in the agriculture which is to be developed there. We believe Californians generally are moved by this sentiment, and it will be well to read what Uncle Samuel proposes to do for this new daughter-in-law in the way of improving her trousseau, which was somewhat scanty when she came into the family. We find a very interesting account in the Washington Star:

A COMMISSIONER OF AGRICULTURE.—Possibly the widest field ever opened to an officer of the Agricultural Department has been assigned to Prof. F. Lamson-Scribner, at present chief of the bureau of agrostology. On February 1 next he will sail with his family for the Philippine Islands and will there establish a complete bureau of agriculture to investigate present agricultural conditions in the archipelago, to disseminate knowledge of advanced agricultural methods and to assist in the development to their fullest possible extent of the practically unlimited agricultural opportunities of the islands. With agriculture in the Philippines conducted along modern lines, it is believed the United States can grow in its own soil every vegetable product now used in the world.

Prof. Scribner's appointment was made by the Secretary of War recently in pursuance of an act of the United States Philippine commission. That legislation created, "under the Department of the Interior, an insular bureau of agriculture, which shall conduct investigations and disseminate useful information with reference to the agricultural resources of the Philippine Islands, the methods of cultivation at present in vogue and their improvement, the practicability of introducing new and valuable agricultural products, the introduction of new domesticated animals and the improvement of the breeds of domesticated animals now found in the islands, and shall in general seek to promote the development of the agricultural resources of the archipelago." The territorial field of the new bureau is to include "the government farms at Magalang, in the province of Pampanga, and at La Carlota, in the province of Western Negros, and the government agricultural stations in the provinces of Iloilo, Cebu, Isabela, Ilocos and Albay."

UNLIMITED AGRICULTURAL POSSIBILITIES.—"The territory included in that assignment," said Prof. Scribner recently, "is practically unlimited in its agricultural possibilities. It will produce everything known to temperate climates, approximately everything known to the tropics, and several articles of food and industrial use not grown in any section of the United States. Just the mere enumeration of the products now grown in the Philippines is an apparently endless task. As an indication merely, a man can devote his farm to lemons, Indian corn, cocoa, sugar, sweet potatoes, Irish potatoes, 120 kinds of rice, wheat, cof-

fee, bananas, mangoes, tea, grapes, figs, mulberries, eucalyptus, apples, peas, cherries, peaches, apricots, berries of a thousand varieties, vegetable seeds, and about anything else you happen to think of.

"Several of those vegetable growths should receive some attention. There are three varieties of good coffee—very good coffee—produced now. It may be that others can be developed. Of the three now grown, one is a native product and has a very fine flavor. Tea of nearly every known grade is already cultivated. Over thirty tons of sugar—not cane, but sugar—are grown to the acre, and the Philippine sugar plantation produces three crops a year. Alfalfa will grow six crops to the year. With the soil properly fertilized, no one can tell how much these islands can produce of these commodities. Forage is one of the present problems of the Philippine government. It should be very easy to solve when modern methods are applied to the production of fodder. I have here on my desk from the National Museum a collection of over eighty grasses now growing there. As a general proposition, almost any grass is good for fodder. The uplands are all covered with grasses and are said to be equal as grazing tracts to any in the world.

### A FORECAST OF FUTURE PROSPERITY.

"One region in the islands, not more than 135 miles north of Manila, has an elevation of 5000 feet, a temperature which never exceeds 78° nor falls below 45°, and can grow every product of the temperate regions. There are abundant lowlands for the growth of lowland rice and plenty of ground suitable for the production of upland rice. Indigo will prove one of the most valuable export products. I've no doubt but that the coffee and tea industries will thrive, although overdevotion to sugar has temporarily eclipsed them. The opportunities open to the Philippine farmer, when once he has progressed beyond the stage of the wooden plow, are almost unlimited, I think."

According to the creative act, Prof. Scribner is to "submit to the Philippine commission a plan for the organization of the bureau, framed as nearly as may be after the organization of the Department of Agriculture of the United States, with such variations as may be required by the different conditions in the two countries and the provisions of an act 'providing for the establishment of government laboratories in the Philippine Islands. He shall have general supervision and control over the work of the bureau and shall appoint its subordinate officers and employees, subject to the provisions of the Civil Service Act and of Act 25. He shall discharge all such other duties in connection with the work of the bureau as may be assigned to him by the Secretary of the Interior."

Secretary Root made his selection after consultation with Secretary Wilson on the latter's commendation. The Secretary of Agriculture will also provide for the establishment of an experiment station, organized as experiment stations in the United States are organized, but he purposes to make the Philippine station subordinate to the Secretary of War in order that the entire Philippine bureau may be under one head. The new chief of the bureau hopes to take with him to the Philippines the nucleus of his force—a capable soil expert, an agrostologist, or expert in grasses, a plant culture and plant breeding expert, a dairy expert, a botanist and various assistants, although several of the offices will be combined in one man.

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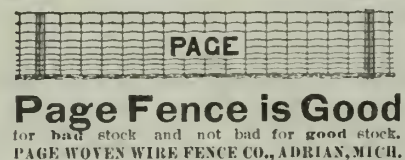
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330 Market St., San Francisco, Cal.

AND

918 F St., Washington, D. C.



## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, Jan. 8, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July
Wednesday.....	@	@
Thursday.....	81½@83¼	81½@82¼
Friday.....	83¼@82½	82½@82
Saturday.....	82¼@83¼	82½@82½
Monday.....	83¼@84¼	82½@84
Tuesday.....	84¼@83¼	83¼@82½

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May.	July
Wednesday.....	* @	@
Thursday.....	45¼@46¼	39½@40
Friday.....	46¼@46	40 @39½
Saturday.....	46¼@46¼	39½@40½
Monday.....	46¼@47	40½@40½
Tuesday.....	47¼@46¼	40¼@40

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 09¼@1 09½	1 11½@1 11½
Friday.....	1 09¼@1 09½	@
Saturday.....	1 09¼@1 10	@
Monday.....	1 10¼@1 10½	1 12¼@1 12½
Tuesday.....	1 10¼@1 09¼	1 11¼@1 11½
Wednesday.....	1 09¼@1 10	1 11 @

\* Holiday.

## WHEAT.

Although no very pronounced changes have been established in quotable values for spot wheat in the local market since last review, the trend of prices has been against the buying interest. Additional strength was developed in Eastern markets, and was to some extent reflected on the situation in Europe, but advices from Liverpool, the leading grain center abroad, did not indicate much activity or much firmness. This is not surprising, as the news from the eastern side of the Atlantic is almost invariably of a bearish cast, being given out by and shaped in favor of the buying interest. The dry weather in this State has aided in no small degree in imparting a stiff tone to the market locally. Exporters have been endeavoring to avoid paying higher prices for wheat, so as to be able to make a profitable record on the high priced ships they are now loading. They could not purchase freely, however, without paying an advance on values lately ruling. Their needs may compel them to advance their bids materially before the fleet now engaged is wholly provided for. There are at present about twenty ships on the engaged list, with a carrying capacity of about 50,000 tons. Ships now headed this way and all due within four months are good for 275,000 tons more. The market closed firm at the quotations for spot wheat, with speculative values unsettled.

## LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on Dec. 1st and Jan. 1st:

Tons—	Dec. 1st.	Jan. 1st.
Wheat.....	124,717	*113,128
Barley.....	53,901	†39,374
Oats.....	7,500	8,207
Corn.....	206	573

\*Including 64,850 tons at Port Costa, 47,316 tons at Stockton.

†Including 23,826 tons at Port Costa, 12,564 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 11,589 tons for the month of December. A year ago there were 155,552 tons wheat in Call Board warehouses.

California Milling.....	1 08¼@1 12¼
Cal. No. 1 shipping, alongside.....	1 06¼@1 07¼
Oregon Valley.....	1 06¼@1 08¼
Washington Blue Stem.....	1 07¼@1 12¼
Washington Club.....	1 05 @1 07½
Off qualities wheat.....	1 00 @1 05

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	68-40@65-4¼d	65-50@65-5¼d
Freight rates.....	38@39¼s	35@36¼s
Local market.....	98¼@1 01¼	1 05@1 07¼

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.09½@1.10½
December, 1902, delivery, \$1.11@1.12½
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.11@—; May, 1902, \$1.09½@1.10.

## FLOUR.

The local flour combine advanced quotations 25c. per barrel on Thursday last.

The advance was wholly justified, and by many in the trade was looked for weeks ago. Not much business has been done at the advanced figures, however, as brokers, in accordance with their old time habits, managed to rush in orders which were dated back so as to enable their buying clients to stock up at old prices.

Superfine, lower grades.....	22 40@2 50
Superfine, good to choice.....	2 60@2 90
Country grades, extras.....	3 15@3 35
Choice and extra choice.....	3 35@3 65
Fancy brands, jobbing.....	3 65@3 75
Oregon, Bakers' extra.....	2 90@3 25
Washington, Bakers' extra.....	2 90@3 40

## BARLEY.

Firmness has prevailed in the barley market, with no lack of buyers, and with sellers not very numerous at going rates. More especially was this the case as regards feed qualities, which have been selling close to inside prices quoted for hewing and export grades. Barley is by long odds the cheapest feed cereal on the list, and there are not a few who anticipate decidedly better prices before the season closes. This is almost certain to be the case if the State is not favored with liberal rains in the near future. The speculative market did not show much activity, but inclined against buyers.

Feed, No. 1 to choice.....	82¼@ 85
Feed, fair to good.....	80 @ 82¼
Brewing, No. 1 to choice.....	85 @ 90
Chevalier, No. 1 to choice.....	92¼@1 00
Chevalier, poor to fair.....	80 @ 85

## OATS.

The market shows fully as strong tone as previously noted, and there is nothing to warrant anticipating the development of any more favorable conditions for the buying interest for some time to come. That there will be a clean-up of all desirable qualities this season is altogether probable, even should values be moved to still higher levels than now current.

White Oats, fancy feed.....	1 37¼@1 42¼
White, good to choice.....	1 30 @1 40
White, poor to fair.....	1 20 @1 27¼
Gray, common to choice.....	1 27¼@1 37¼
Milling.....	1 35 @1 42¼
Surprise, good to choice.....	1 37¼@1 42¼
Black Russian.....	1 10 @1 30
Red.....	1 15 @1 40

## CORN.

Market displays much the same firm tone for desirable qualities as previously noted, with spot stocks and offerings of very moderate volume, and no probability of there being a glut of good to choice corn of any variety this season. In spot supplies Large White is more liberally represented than any other kind, and market is in consequence easier than for Yellow.

Large White, good to choice.....	1 35 @1 40
Large Yellow.....	1 35 @1 45
Small Yellow.....	1 45 @1 55

## RYE.

While the market has inclined against buyers, quotable values have not changed materially since date of last review. A shipment of 4,442 centals went forward by sailing vessel for New York.

Good to choice, new.....	80 @ 82¼
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## BUCKWHEAT.

There is not much here, and no heavy quantities offering to arrive. Market is moderately firm at figures quoted, but quiet.

Good to choice.....	1 70 @1 75
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## BEANS.

No brisk movement at present in beans of any description, but values are being, as a rule, well sustained, the quotable range of prices showing some upward changes during the past week. To purchase freely, full figures quoted or more would have to be paid. On the other hand, if undue selling pressure were exerted, lower prices than are warranted as quotations might have to be accepted.

Pea, fair to good, 100 lbs.....	3 50 @4 00
Small White, good to choice.....	2 85 @3 15
Lady Washington.....	2 80 @3 05
Pinks.....	2 60 @2 20
Bayos, good to choice.....	2 40 @2 60
Reds.....	2 50 @2 75
Red Kidney.....	3 50 @3 75
Limas, good to choice.....	4 50 @4 60
Black-eye Beans.....	8 50 @8 65
Garbanzos, large.....	2 00 @2 25
Garbanzos, small.....	1 25 @1 50

## DRIED PEAS.

Market is well stocked with Green, and for this variety presents an easy tone. Stocks of Niles are not of large volume, are mostly in few hands, and are, as a rule, being firmly held. Should there be any special inquiry for Niles peas in the near future, prices for same would speedily advance.

Green Peas, California.....	1 50 @2 00
Niles Peas.....	1 75 @1 80

## WOOL.

With the local market almost bare of offerings, there is no opportunity for business. Former quotations are continued, but represent little more than nominal

values at this writing. Prospects could not well be more encouraging for a good market for coming Spring clip. If the wools show good condition they will doubtless be eagerly sought after. Markets East and abroad are reported in generally healthy shape.

## SPRING.

Southern, defective, 7 mos.....	7 @ 8
Oregon Valley, fine.....	14 @15
Oregon Valley, coarse to medium.....	12 @13
Eastern Oregon, choice.....	11 @13
Eastern Oregon, fair to good.....	9 @10
Nevada, as to condition.....	10 @12

## FALL.

Humboldt and Mendocino.....	11 @12
Northern Mountain, free.....	9 @10
Northern Mountain defective.....	8 @ 9
Middle Counties.....	8 @10
San Joaquin and Plains.....	6½@ 8½
San Joaquin Lambs.....	7½@ 9

## HOPS.

Business is slow and market shows no firmness worth mentioning. Although supplies on this coast are mainly out of first hands, remaining offerings draw forth no competitive bidding of consequence from buyers. Quotations are based mainly on asking figures, and are not obtainable in a wholesale way. A New York authority under recent date reports as follows: "The very quiet trading of the past week was in line with the general experience at this season of year. Neither brewers nor dealers attempted to do much, and while exporters were more or less engaged in clearing stock that arrived from the country, they did very little new business. The moderate stocks have, coupled with steady to firm advices from all interior points, tended to make a fairly confident feeling on this market, in spite of the dullness; indeed, the few transactions reported are quite up to the best figures that we have quoted of late, quality considered. We are advised of further purchases in the interior of this State at 9@12½c, latter for exceptionally fine growths. Most of the stock has been culled over repeatedly, and even for such lots as are left there is rather a firm holding. Cable and mail advices report firm English markets for fine goods, but an abundance of very inferior stock, which is selling at low and irregular prices."

Good to choice, 1901 crop.....	10 @12
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## HAY AND STRAW.

The tone of the hay market is unsettled, owing to weather influences, although in the matter of quotable rates there are no special changes to record. The future of the market will be governed largely by weather conditions, stiffening or weakening as prospects appear favorable or otherwise for coming season.

Wheat, good to choice.....	9 00@12 50
Wheat and Oat.....	9 00@11 50
Oat.....	7 00@10 00
Barley and Oat.....	6 50@ 8 50
Barley.....	6 50@ 8 60
Alfalfa.....	8 00@10 00
Clover.....	6 00@ 8 00
Stock.....	5 50@ 7 00
Compressed.....	9 00@12 50
Straw, ½ bale.....	35@ 50

## MILLSTUFFS.

Prices for Bran have been again advanced, owing to limited stocks. Market for Middlings and Shorts also tended against buyers, but the demand for these descriptions of mill offal was not active. Values for Rolled Barley and Milled Corn were well sustained at the quoted range.

Bran, ½ ton.....	17 50@18 00
Middlings.....	20 00@21 00
Shorts, Oregon.....	18 00@18 50
Barley, Rolled.....	18 50@19 00
Cornmeal.....	31 00@32 00
Cracked Corn.....	30 00@31 00

## SEEDS.

There is no great amount of business doing in any of the several varieties of seeds quoted herewith. In quotable values there are no changes of moment to record. Alfalfa is offering in moderate quantity, but lack of rain has kept hack orders from the interior. A shipment of 1084 sacks Mustard went forward per sailing vessel for New York; stocks remaining are light.

	Per ctt.
Alfalfa, Cal.....	7 00@ 7 50
Alfalfa, Utah.....	8 25@ 8 50
Flax.....	2 40@ 2 60
Mustard, Yellow.....	3 25@ 3 50
Mustard, Trieste.....	3 00@ 3 15
	Per lb.
Canary.....	3¼@ 3¼
Rape.....	1¼@ 2¼
Hemp.....	3¼@ 3¼

## BAGS AND BAGGING.

Inactivity continues to prevail in this department. Calcutta Grain Bags are being offered for delivery next summer at lower prices than current last harvest, but are not receiving any special attention. Prospects for coming crop are as yet too poorly defined to enable any close figuring on Grain Bag requirements. Trade in Wool Sacks is light at unchanged figures, but some activity is looked for in a few weeks, on account of spring clip.

Calcutta Grain Bags, huyer June-July.....	6 @ 6¼
Calcutta Grain Bags, spot.....	6¼@—
San Francisco Grain Bags, 22x36, spot.....	@—
Wool Sacks, 4 lbs.....	31 @36
Wool Sacks, 3¼ lbs.....	32 @33
Fleece Twine.....	8¼@—
Gunnies.....	@—
Bean Bags.....	5¼@ 5½
Fruit Sacks, cotton, three sizes.....	5½, 6, 6½
Fruit Sacks, Jute.....	7 @ 7½

## HIDES, PELTS AND TALLOW.

In consequence of a good many grubby Hides arriving the tendency is to a wider range of values than has been lately current, but no pronounced changes in quotable rates have yet taken place. Tallow is in fair demand, both for shipment and on local account, and is commanding steady figures.

## HONEY.

Spot supplies are of very moderate volume, with demand for the time being not particularly active. Offerings are not being crowded upon the market, however, and prevailing values are being as a rule well sustained.

Extracted, White Liquid.....	5¼@ 6
Extracted, Light Amber.....	4¼@ 5
Extracted, Amber.....	4 @—
White Comb, 1½ frames.....	11 @12½
Amber Comb.....	8 @10
Dark Comb.....	6 @ 7

## BEESWAX.

Arrivals and offerings are of small compass. There is no lack of demand, desirable qualities meeting with prompt custom at full current rates.

Good to choice, light, ½ lb.....	26 @28
Dark.....	24 @25

## LIVE STOCK AND MEATS.

Market throughout is more quiet than during the holidays, but prices continue in much the same position as last quoted. Beef of high grade is not arriving freely, and is not likely to be in heavy supply in the near future. Offerings of Mutton are proving just about sufficient for current requirements. Veal is in light receipt. Lamb other than yearlings is too scarce to quote. Hogs have not been arriving very freely this week, and tendency has been to slightly firmer figures, although it is not probable that any sharp advance in values will soon take place.

Beef, first quality, dressed, net ½ lb.....	7¼@ 8
Beef, second quality.....	7¼@—
Beef, third quality.....	6¼@ 7
Mutton—ewes, 7@7¼c; wethers.....	7¼@ 8
Hogs, hard grain fed, 150 to 250 lbs.....	5¼@ 6
Hogs, small, fat.....	5¼@ 6
Hogs, large, hard, over 250 lbs.....	5¼@ 5¾
Hogs, country dressed.....	6¼@ 7
Veal, small, ½ lb.....	8 @ 9¼
Veal, large, ½ lb.....	8 @ 8¼
Lamb, spring, ½ lb.....	9 @ 9¼

## POULTRY.

Turkeys have arrived in very light quantity the current week, and the market for this fowl has presented a better tone, but not many were required to satisfy the demand. Young Chickens continued in good request, were in limited receipt and met with a firm market. Old Chickens which were large and fat were by no means neglected, but such as were small and poor received little attention. Ducks brought fully as good figures as preceding week. Geese were not much inquired for, but were not quotably lower. Pigeons were in fair demand, bringing steady prices.

Turkeys, dressed, choice.....	16 @ 18
Turkeys, alive, Hens, ½ lb.....	14 @ 15
Turkeys, alive, Cockerhens, ½ lb.....	13 @ 14
Hens, California, ½ dozen.....	4 00 @5 00
Roosters, old.....	4 25 @4 75
Roosters, young (full-grown).....	4 50 @5 50
Fryers.....	4 50 @5 00
Broilers, large.....	4 00 @5 00
Broilers, small to medium.....	3 00 @4 00
Ducks, old, ½ dozen.....	4 50 @5 00
Ducks, young, ½ dozen.....	6 00 @7 00
Geese, ½ pair.....	1 50 @1 75
Goslings, ½ pair.....	1 75 @2 00
Pigeons, old, ½ dozen.....	1 25 @1 50
Pigeons, young.....	1 75 @2 00

## BUTTER.

While receipts of fresh are not heavy, there is more than enough for the immediate demand, and the market lacks firmness, especially for other than most select qualities. Fancy brands of creamery are commanding 26c. from special custom, but this figure is hardly warranted as a regular quotation. Held and packed butter is still in fair supply, which accounts for the rather light inquiry for fresh.

Creamery, extras, ½ lb.....	25 @—
Creamery, firsts.....	21 @—
Creamery, seconds.....	19 @—
Dairy, select.....	21 @22
Dairy, firsts.....	18 @—
Dairy, seconds.....	16 @—
Mixed store.....	13 @14
Creamery in tubs.....	19 @21
Pickled Roll, ½ lb.....	@—
Firkin, California, choice to select.....	17 @19
Firkin, common to fair.....	16 @17

## CHEESE.

Mild new of high grade is not in large supply and in a small way is commanding above quotations. Of other descriptions of domestic product, however, there is



enough to cause the market to incline in favor of buyers. There are no large stocks of Eastern cheese now here and not likely to be for some time.

California, fancy flat, new.....	11 1/2 @ 12
California, good to choice.....	10 1/2 @ 11 1/2
California, fair to good.....	10 @ 10 1/2
California, "Young Americas".....	11 1/2 @ 12 1/2

EGGS.

Values have been on the down grade since last review and further declines are anticipated the coming week. That the market will show any special stability until prices get down to a packing basis is not probable. Cold storage eggs from last season are still in stock in considerable quantity, mostly Eastern, and prices on these are being shaded to effect sales, owners being anxious to close out holdings.

California, select, large, white and fresh.	30 @ —
California, select, irregular color & size.	27 @ 29
California, good to choice store.....	25 @ 27
California, common to fair store.....	— @ —
Eastern, good to choice.....	— @ —
Cold Storage.....	17 @ 20

VEGETABLES.

Most kinds of fresh vegetables were in slim supply, as is to be expected at this time of year. Green Peas made the best showing and sold at rather moderate figures. String Beans, Tomatoes and Peppers all brought, as a rule, good prices. Onions were in fair receipt, some arriving from Oregon and Washington, and market was easy in tone, although quotable values showed no radical change.

Beans, String, # lb.....	10 @ 12 1/2
Beans, Wax, # lb.....	— @ —
Cabbage, choice garden, # 100 lbs.....	50 @ —
Cauliflower, # dozen.....	40 @ 50
Cucumbers, Bay, # large box.....	— @ —
Egg Plant, Los Angeles, # lb.....	10 @ 15
Garlic, # lb.....	2 @ 3
Mushrooms, # lb.....	— @ —
Onions, Yellow Danver, # cental.....	1 50 @ 2 00
Peas, Sweet garden, # lb.....	2 @ 4
Peppers, Green, Los Angeles, # lb.....	8 @ 10
Peppers, Bell, # box.....	— @ —
Rhubarb, # lb.....	5 @ 7
Squash, Marrowfat, # ton.....	5 00 @ 8 00
Summer Squash, # box.....	1 25 @ 1 50
Tomatoes, Los Angeles, # box.....	1 25 @ 1 75

POTATOES.

The market has developed nothing new or especially noteworthy since date of last report. Stocks are being, as a rule, very steadily held, but demand is slow and mostly local. The situation is a waiting one, holders anticipating a revival of Eastern demand at an early day. Oregon and Washington are now forwarding moderate quantities of potatoes to this center. Merced Sweets were in fair supply, latest arrivals showing in the main good quality.

Burbanks, Salinas, # 100 lbs.....	1 30 @ 1 60
River Burbanks in sacks, # cental.....	90 @ 1 10
Petaluma and Tomales Burbanks.....	1 10 @ 1 30
Oregon Burbanks.....	1 25 @ 1 50
River Reds.....	1 40 @ 1 60
Sweets, Merced, # cental.....	1 00 @ 1 25

The Fruit Market.

FRESH FRUITS.

It is seldom the market for domestic fresh fruits, other than citrus, is so lightly stocked as at present. Aside from Apples, there is practically nothing offering in a way to be quotable. The market for Apples continues firm for choice to select, such stock being in good request at prevailing values. In a small way very fancy 4-tier fruit is commanding an advance on outside quotations. Ordinary qualities, although not in heavy supply, are not being especially sought after, and have to go in most instances at comparatively low figures.

Apples, fancy, # 4-tier box.....	1 75 @ 2 00
Apples, good to choice, # 50-lb. box.....	1 00 @ 1 50
Apples, common to fair, # 50-lb. box.....	50 @ 75

To Build a Home,

no matter where located, the first absolute necessity is an ample supply of good, pure water. Water then being a necessity to both men and animals; have you ever stopped to consider how much money there is in that idea? Well, just stop long enough to figure on it for a moment, then send for a catalogue of our



STAR Drilling Machines.

The investment in one of these will make you more money than you can possibly make in any other way with the same expenditure. Think it over and write us.

Star Drilling Machine Co., Akron, Ohio.

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DEALERS IN —

BEANS, POTATOES, GRAIN, DRIED FRUITS, DECIDUOUS AND CITRUS FRUITS.

Car Lots a Specialty. Send Samples. 224 CLAY STREET, SAN FRANCISCO.

DRIED FRUITS.

The market for cured and evaporated fruits shows exceedingly healthy condition, being firm at quotations and lightly stocked, with very fair demand for most kinds, which is especially remarkable at this particular time, just after the mid-winter holidays, ordinarily a dull and depressed period in the dried fruit trade. Stocks of good to choice dried fruits of all descriptions are light, with prospects of a complete clean-up of nearly all kinds at an early date. To purchase freely at present would be difficult, even at an advance on current quotations. Apples, Peaches, Pears and Plums are all in light supply and almost wholly in second hands. The market for choice Evaporated Apples, fancy Peaches and fancy Pears is particularly strong, with a probability of higher figures ruling in a small way for remaining supplies. High grade Pears are now so scarce as to be hardly quotable. Prunes now offering are mainly old crop, for which the present price is on the 3c basis for the 4 sizes. Market for new Prunes is firm on 3 1/2c basis for Santa Clara 4's and 3 1/2c for outside stock, with strong probability of the situation being still more favorable to the selling interest before another season opens. The Eastern market, according to a New York authority, is reported under recent date as follows: "The home trade in Evaporated Apples has been light again this week, but there has been fair business with exporters, partly on new orders and partly in the way of filling old contracts. Enough of this has been accomplished to give good support to the market, and under special conditions somewhat stronger prices were realized at times. Shippers have taken some fair fruit at 8 @ 8 1/2c, very good quality at 8 1/2c, and prime at 9 1/2c generally, though two or three cars brought a fraction more. The highest bids have been on straight car lots suitable to put in on contracts; smaller lots of prime have sold at 9 @ 9 1/2c. Choice and fancy grades are held firmly at 9 1/2 @ 11c. Inferior sorts still rather neglected. Considerable cold storage stock is available at 7 1/2 @ 8 1/2c, but there are some finer lots here that bring more. Scarcely any interest in Sun-dried Apples at present and any effort to effect important sales would necessitate the acceptance of lower prices. California Peaches and Apricots quiet. Prunes in moderate jobbing demand and firm."

EVAPORATED OR BLEACHED.

Apricots, Royal, prime.....	8 @ 8 1/2
Apricots, Royal, choice, in sacks, # lb.....	8 1/2 @ 9
Apricots, Moorpark.....	10 @ 12
Apples, in 50-lb boxes, rings, pressed, fancy.....	8 @ 8 1/2
Apples, 50-lb boxes, rings, pressed, good to choice.....	6 1/2 @ 7 1/2
Nectarines, # lb.....	5 @ 6
Peaches, unpeeled, fancy.....	8 @ 9
Peaches, unpeeled, choice.....	6 1/2 @ 7 1/2
Peaches, peeled, in boxes.....	12 @ 14
Pears, halves, choice to fancy.....	6 1/2 @ 8 1/2
Plums, Red and Black, pitted.....	5 1/2 @ 6 1/2
Plums, White and Yellow.....	5 1/2 @ 6 1/2
Prunes, 4 sizes, in bags, 3 1/2 @ 3 3/4; 50-60s, 4 1/2 @ 4 3/4; 60-70s, 4 @ 4 1/4; 70-80s, 3 1/2 @ 3 3/4; 80-90s, 3 @ 3 1/2; 90-100s, 2 1/2 @ 3; these figures for 1901 crop.	

COMMON SUN-DRIED.

Apricots.....	7 @ 7 1/2
Apples, sliced.....	3 @ 5
Apples, quartered.....	3 1/2 @ 4 1/2
Figs, Black.....	— @ —
Figs, White.....	— @ —
Peaches, unpeeled.....	4 1/2 @ 6
Pears, prime halves.....	4 1/2 @ 5
Plums, unpitted, # lb.....	1 1/2 @ 2 1/2

RAISINS.

The market is strong, with no official changes in card rates of the Growers' Association, but it is more easy to sell than to buy at the figure quoted. Spot stocks now offering in this center are exceedingly light, and there are no evidences of large quantities being available to buyers anywhere. There are some stocks tied up temporarily, pending adjustment of differences between buyers and sellers, but when these raisins are released there is no likelihood of there being any glut of offerings or weakening in prices. Values are more apt to stiffen than to recede as the season advances.

Following are the prices for new crop, as fixed by the Fresno Association:

Loose Muscatels—	Per lb.
4-crown.....	5 1/2
3-crown.....	5 1/4
2-crown.....	4 1/2
Seedless Muscatels.....	5
Seedless Sultanas.....	5 1/2
Thompson's Seedless.....	6
Seeded—	
3-crown, 1-lb. carton.....	7
2-crown, 1-lb. carton.....	6 1/2
London Layers, 20-lb. boxes—	
2-crown.....	—
3-crown.....	1 50

CITRUS FRUITS.

Comparatively fancy figures were realized for some select Navels the past week, with auction sales up to \$3 per box and a little higher, to cover some urgent shipping orders. While the market for fine Navels of desirable sizes tended in favor of sellers, under light offerings of above description, the market was not quotable in a

wholesale way at the stiff prices realized under sharp competition between a few buyers. For other than choice to select Navels, the orange market was without appreciable improvement over condition of preceding week. Lemon market was without quotable change, and for other than best qualities current values were not well sustained. Limes were offering in moderate quantity at previously quoted prices.

Oranges—Navels, # box.....	1 25 @ 2 50
Seedlings, # box.....	75 @ 1 25
Tangerines, # 1/2 box.....	60 @ 85
Lemons—California, select, # box.....	2 50 @ 2 75
California, good to choice.....	1 50 @ 2 00
California, common to fair.....	75 @ 1 25
Grape Fruit, # box.....	1 75 @ 2 50
Limes—Mexican, # box.....	4 00 @ 4 50

NUTS.

Almonds are nearly out of stock, with market unfavorable to buyers. Especially are fine I X L's scarce and stiffly held. Walnuts are still obtainable in a moderate way in carload lots at 8 1/2 @ 8 3/4c for No. 1 soft shell, any higher figures being jobbing prices. Peanut market is quiet but steady.

California Almonds, shelled.....	15 @ 18
California Almonds, paper shell, # lb.....	10 @ 12
California Almonds, soft shell.....	7 @ 9
California Almonds, hard shell.....	5 @ 6
Cal. White Walnuts, No. 1 soft shell.....	8 1/2 @ 9 1/2
Cal. White Walnuts, No. 2 soft shell.....	6 1/2 @ 7 1/2
Cal. White Walnuts, No. 1 hard shell.....	7 1/2 @ 8 1/2
Cal. White Walnuts, No. 2 hard shell.....	6 @ 7
Peanuts, California, fair to prime.....	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.....	5 1/2 @ 6
Pine Nuts.....	5 @ 6

WINE.

The market is firm for both new and old wines. It is doubtful if much dry wine of last vintage will be obtainable under 22c per gallon, and at this figure buyers are likely to be disappointed if they look for superior quality. Choice dry wines of 1901 are quotable wholesale at 24 @ 26c per gallon, with probability of higher figures prevailing in a moderate way for selections. Asking prices for old wines have in numerous instances been advanced from 2 1/2 @ 5c over the figures recently current.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	64,924	3,384,372
Wheat, centals.....	385,604	4,978,706
Barley, centals.....	210,914	4,489,051
Oats, centals.....	11,885	651,619
Corn, centals.....	3,569	53,742
Rye, centals.....	6,830	109,305
Beans, sacks.....	3,352	531,257
Potatoes, sacks.....	20,428	836,590
Onions, sacks.....	3,104	146,319
Hay, tons.....	2,699	84,434
Wool, hales.....	211	41,491
Hops, hales.....	73	6,800

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	76,200	2,439,602
Wheat, centals.....	406,983	4,551,458
Barley, centals.....	158,509	3,464,700
Oats, centals.....	2,120	120,784
Corn, centals.....	182	8,566
Beans, sacks.....	53	18,936
Hay, hales.....	53	5,372
Wool, pounds.....	522,721	233,621
Hops, pounds.....	35,088	442,161
Honey, cases.....	12	5,453
Potatoes, pack's.....	2,822	27,833

California Dried Fruit at New York.

NEW YORK, Jan. 8.—Evaporated apples, common, 7 @ 8 1/2c; prime wire tray, 9 1/4 @ 9 1/2c; choice, 9 3/4 @ 10c; fancy, 10 1/2 @ 11c. California Dried Fruits.—Prunes are in fair request and market firm. Other fruits quiet. Prunes, 3 1/2 @ 7c. Apricots, Royal, 9 1/4 @ 13c; Moorpark, 10 @ 14c. Peaches, unpeeled, 7 1/2 @ 10c; peeled, 16 @ 18c.

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In many instances it lasts longer than the wood work which surrounds it.

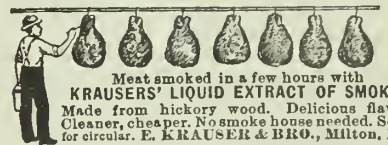
It is saturated with a perfectly odorless compound and consequently can be used in the highest class building, especially in the construction of cold storage rooms and packing houses where the absence of odor is essential.

It is proof against fumes, will not absorb obnoxious vapors, will not deteriorate or decay, but will last and render an effective service for an indefinite period.

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Can be supplied alone or mixed in any proportion to supply whatever deficiency may exist in the soil, thus paying only for what is lacking and necessary to replace.

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## THE VINEYARD.

### Grafting in the Vineyard.

Prof. George Husmann of Napa is well known as an advocate of grafting in the vineyard instead of bench grafting, and it is interesting to have a detailed exposition of his method as follows: As I have followed this since 1852, when it was an unknown business, and I first found the hints of it in A. J. Downing's "Fruit and Fruit Trees in America," I may say, without boasting, that I have some experience, and followed it in noting every phase of it closely and thinking, always studying the why and wherefore.

My first experiments were with Eastern varieties, grafting Herbemont and Norton's Virginia on Isabella roots, cleft grafting just below the ground, and nearly every one grew to my great delight and the astonishment of my neighbors; and to this day I have found this old-fashioned method about as successful as any, provided the stock is strong enough to hold the scion firmly, when not even tying or bandaging in any way is needed. In fact, I think tying in this case injurious, while it is necessary with smaller vines. And in grafting on resistant, the scions of non-resistant, as it is mostly the use here, we vary the method only by grafting at or above the surface, so as to prevent rooting of the scion, which would make it non-resistant. But in this case the ground should be hilled up around the junction, so as to protect it from drying out. The size of the scion should correspond somewhat to the strength of the vine; if this is strong and vigorous, the scion should have six to eight buds, of which the upper ones may be used to form the crown or head of the vines.

As to time, in which the operation should be performed, this depends somewhat on the locality and the habit of the stock. But the sap must be in rapid motion; therefore early grafting is not advisable; and I have found the best time to be here in April, though grafts put in in May did equally well. But in a talk with Mr. Jacob Beringer, one of our most successful vineyardists, and an early importer of Rupestris St. George, he said his experience with growing the stock side by side, Rupestris St. George and Lenoir, he found that the Rupestris should be grafted first, and the Lenoir to follow later. This is easily explained by the habits of the vine, as the Rupestris starts earlier in spring. He found the growth on both equally satisfactory and vigorous, the Rupestris having the advantage of easier propagation, while the Lenoir, if not grafted, is a good producer of a valuable dark colored grape, which makes a wine very valuable for blending with lighter colored red grapes in fermenting. As mentioned before, in strong vines I prefer the old cleft graft, even if cut somewhat diagonally across the grain, and a long sloping wedge is cut on the scion, it is more apt to make junction on both sides. A friend of mine at Hermann, Mo., had great success by using the same in large stocks for the incision, and Mr. Grundel, at Alma, Santa Clara county, follows this practice with such uniform success that he is kept busy in grafting whole vineyards for others. The work had best be done by two men, one clearing around the crown of the stock at the surface, and afterwards filling up around the junction; the other, and of course the most skilled one, to do the grafting and tying, where the stock is not strong enough to hold the scion firmly. The tools he needs are a sharp pair of grape shears to cut off the stock and make the longitudinal cut, and a sharp knife to cut the scion, which must be a close fit on the bark of the latter. If all this is done well 90% should grow. A stake should be driven close to the top of the scion to tie the young growth and prevent it from being blown off by the winds later on.

I do not give any instruction on bench grafting, because I have tried it in the East with poor success, and cannot bring myself to believe that grafting cutting on cutting will, even if they

form a junction and are coddled in the callus bed for three months, make as satisfactory a vineyard as one planted with cuttings and grafted a year or two later.

**BENCH GRAFTING.**—I have found it almost indispensable to a good and rapid junction of the stock and scion, that the sap should be in rapid motion, when the operation is performed. And this is one of the main objections I have to bench grafting cutting upon cutting during the winter and early spring months. The cutting itself has enough to do to strike roots and make a living; how much more hard is its task to unite with the scion, and force this into satisfactory growth, with the additional tax when transplanted from the callus bed to the vineyard the same season. It is certainly more natural to plant the cutting or rooted vine directly in the vineyard, and graft it there the next or second spring, when the sap is in full motion. I leave the first to be explained by the young generation of savants; for my part, I desire nothing more than to help the beginner in my old-fashioned way. But I can safely ask a trial of both methods side by side, and whichever gives best results should be followed. I believe in the most natural and practical course, especially when I am told that 300 bench grafts are the work of a skilled man per day, and I know that two good hands can graft 800 to 1000 per day in vineyard. This is leaving the advantage of a year of vigorous growth out, in favor of vineyard grafting, and also the sprouting and the disturbance thereby during the first two summers, which will delay a crop at least one year.

**WHAT TO GRAFT.**—This is also to be taken into consideration, and a year's delay in the choice will often suggest a modification, to suit the market for grapes or wine. At present I can recommend for red wine grapes Petit Syrah or Serine, Aliante Bouchet, Petit Bouchet, Carignane and Valdepenas. These are all good bearers and make fine wines. But of late our best white wines have been preferred and brought better prices; as the preference was all for red wines a few years ago everybody planted or grafted red wine grapes. Hence the scarcity in fine white wines and the lively demand. Of these my choice is White Pinot or Chablis, Somillon, Red Veltner, Franken Reisling or Sylvaner and Palomino, generally called here Golden Chasselas, but more of a sherry type. These are all good bearers and make first-class white wines. For productiveness and money making the Burger and Green Hungarian or Verte Longe of the French cannot be excelled; and if grown on our hillsides, not in the rich bottom lands, make fine wines, and are fine for fermenting with other fine varieties; in our bottom lands they will average, with tremendous production, low in sugar.

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wrong chimney is  
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a stamp: Don't  
go. **MACBETH.**

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## Patrons of Husbandry.

### Tulare Grange.

Tulare Grange met at its hall at 10 A. M. on the 4th.

After the reading and approval of the minutes of the last previous meeting the special committee, appointed at last meeting, on having shade trees left along the public road made a verbal report.

The officers elected for the ensuing year were then installed by Past Master Shoemaker: F. A. Styles, W. M.; M. Jacob, O.; John Tuohy, L.; E. C. Shoemaker, S.; — Holcom, A. S.; Julius Forrer, T.; Bertha I. Morris, Sec.; A. J. Woods, G. K.; Lillian Burleigh, P.; Ola Jones, F.; Mary Kimball, C.; Adle Slaughter, L. A. S.; Myra Field, O.

Recess was then taken for dinner, after which a class of three took the first and second degrees.

The subject for the day was, "To what extent should the farmer keep a cash account of each crop grown, and of each kind of stock grown upon the farm?" The subject was well discussed, a general system of single entry being deemed sufficient.

The subject for next meeting, "The science of home making," will be led by a paper to be written by Sister Rosson.

The third and fourth degrees will be conferred at next meeting, with fourth degree harvest feast. J. T.

### Stockton Grange.

To THE EDITOR:—Stockton Grange No. 70, P. of H., at its regular meeting, Saturday, Jan. 4, held a very interesting session. There were quite a number of visitors from Castoria Grange of French Camp.

The principal event of the day was the installation of officers, which passed off very pleasantly.

During "Good of the Order" very interesting remarks were made by the visitors and by members of our Grange.

The officers of Stockton Grange for the year 1902, as installed, are as follows: Master, W. L. Overhiser; Overseer, M. T. Noyes; Lecturer, Mrs. G. E. Leadbetter; Steward, Mrs. Mary H. Root; Assistant Steward, J. L. Beecher; Chaplain, Mrs. C. E. Overhiser; Treasurer, N. T. Root; Secretary, Nathan H. Root; Gatekeeper, Mrs. P. D. Rumrill; Ceres, Mrs. A. Ashley; Pomona, Mrs. P. C. Noyes; Flora,

Mrs. Cora G. Beecher; Lady Assistant Steward, Miss Lizzie S. Root.

N. H. Root, Secretary.

Stockton, Jan. 4.

### New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING DECEMBER 17, 1901.

688,821.—RAILROAD BRAKE—W. H. Bates, Dixie, Wash.  
689,166.—MINING—J. E. Coleman, Spokane, Wash.  
689,167.—MINING—J. E. Coleman, Spokane, Wash.  
689,085.—SWIMMING DEVICE—B. J. Hooper, Portland, Or.  
689,190.—PROCESS—B. Hunt, S. F.  
689,190.—BLOCK—L. W. Johnson, Jerome, Ariz.  
688,879.—METER BOX—B. H. Otis, Perris, Cal.  
689,028.—BRACE FOR BUGGY TOPS—A. Seekt, Pullman, Wash.  
689,323.—CARTRIDGE CAPPER—A. Seidel, Arcata, Cal.  
689,338.—TAPPING HUNG—H. Wendt, S. F.

FOR THE WEEK ENDING DEC. 24, 1901.

689,631.—TELEPHONE INDICATOR—S. J. Ballard, Los Angeles, Cal.  
689,456.—DISTRIBUTOR—H. W. Blaisdell, Yuma, A. T.  
689,534.—GARMENT SUPPORTER—Bloom & Mensor, Seattle, Wash.  
689,785.—OIL BURNER—A. Braun, Los Angeles, Cal.  
689,384.—BUCKLE—E. C. Bruner, Tekoa, Wash.  
689,788.—SAW SWAGE—J. F. Bryan, Springfield, Or.  
689,464.—FOUNTAIN BRUSH—J. C. Cramer, Los Angeles, Cal.  
689,468.—FAUCET—J. P. Dobbins, Hayfork, Cal.  
689,476.—GUN SIGHT—S. E. Fischer, S. F.  
689,798.—PAPER BAG HOLDER—C. F. Francisco, San Diego, Cal.  
689,799.—LEACHING ORES—R. L. Graves, Sumpter, Or.  
689,612.—GOLD SAVING APPARATUS—C. G. Hambleton, Oakland, Cal.  
689,395.—DOOR HANGER—J. Handscumacher, S. F.  
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FROM THE CELEBRATED **PALO ALTO STOCK FARM,**  
On THURSDAY, January 30, 1902, at 11 a. m.

FOLLOWING IS THE LIST TO BE SOLD AT THIS AUCTION:

Color & Sex	Foaled	NAME.	SIRE.	DAM.	Stallion Bred to in 1901.
ch. m.	1885	Anselma 2:39 1/4	Ansel 2:30	Elaine 2:30	Monbells 2:23 1/4
b. m.	1896	Asombrosa	Azmoor 2:30 1/4	Abwaga	Mendocino 2:19 1/4
br. m.	1820	Bell Bird 2:22	Electioneer	Beautiful Bells 2:29 1/4	Iran Alto 2:12 1/4
b. m.	1898	Cecilo	Mendocino 2:19 1/4	Cecil	Exioneer
b. m.	1887	Clarion 2:25 1/4	Ansel 2:30	Consolation	Mendocino 2:19 1/4
br. m.	1895	Clarionette	Dexter Prince	Clarion 2:35 1/4	Mendocino 2:19 1/4
b. m.	1897	Coralia	Hoodle 2:12 1/4	Coral 2:18 1/4	Monbells 2:23 1/4
b. m.	1892	Corsica	Dexter Prince	by Corsican	Exioneer
b. m.	1884	Ella 2:29	Electioneer	Lady Ellen 2:30 1/4	Nutwood Wilkes 2:16 1/4
cb. m.	1882	Elsie	General Benton	Elaine 2:30	McKinney 2:11 1/4
bl. m.	1895	Glacinta	Guy Wilkes 2:15 1/4	Sprule	Azmoor 2:30 1/4
b. m.	1884	Lady Agnes	Electioneer	Lady Lowell	Exioneer
b. m.	1890	Lady Nutwood 2:34 1/4	Nutwood 2:18 1/4	Lady Mac	Mendocino 2:19 1/4
bl. m.	1886	Ladywell 2:16 1/4	Electioneer	Lady Lowell	Monbells 2:23 1/4
cb. m.	1883	Laura Drew	Artburton	Molly Drew 2:27	Mendocino 2:19 1/4
cb. m.	1887	Lena	Dexter Prince	Lena R	Mendocino 2:19 1/4
bl. m.	1888	Lilly Thorn	Electioneer	Lady Thorn Jr	Exioneer
b. m.	1881	Morning Glory	Electioneer	Mart	Exioneer
b. m.	1881	Nellie Benton 2:30	General Benton	Norma	Monbells 2:23 1/4
b. m.	1893	Oro rose	Ora Wilkes 2:11	Melrose	Mendocino 2:19 1/4
bl. m.	1892	Sablin	Guy Wilkes 2:15 1/4	Sable	Iran Alto 2:12 1/4
gr. m.	1885	Sonoma 2:28	Electioneer	Sontag Mobawk	Exioneer
cb. m.	1891	Sylla Barnes	Whips 2:27 1/4	Barnes	Monbells 2:23 1/4
b. m.	1887	Willmay 2:30	Electioneer	May	Nazote 2:28 1/4
bl. m.	1897	Zorilla	Dexter Prince	Lilly Thorn	Exioneer

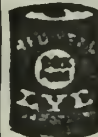
Color & Sex	Foaled	NAME.	SIRE.	DAM.
b. s.	1882	Azmoor 2:30 1/4	Electioneer	Mamie C
br. g.	1898	Altower	Altivo 2:18 1/4	Wildflower (2) 2:21
ch. g.	1899	Menzie	Mendocino 2:19 1/4	Lizzie

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PLACE olives in solution composed of 1 ea. Red Seal Lye to one gallon water. Repeat once or twice to remove tartness. Rinse them thoroughly. Replace lye solution with fresh water. Change water twice daily until, judged by taste, lye is removed from olives.

Replace water with brine composed of 4 ea. salt to 1 gal. water, for two days. Put in brine of 6 ea. salt to gallon water for 7 days. Put in brine of 10 ea. salt to gallon water for 14 days. Finally put the olives into brine of 15 ea. salt to gallon water.

Vessels used must be clean, odorless, tasteless. White or earthenware recommended. Wooden receptacles sealed in boiling water and soda will do. Use small casks, 5 to 10 gallons preferred. Vats or casks should have movable wooden grating 1 or 2 inches from bottom; a close fitting wooden cover and thick cloth over all. If olives are soft at first, use brine immediately after lye instead of fresh water. Remove any slime or scum.

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III. The Fruit Soils of California.	XXIII. The Quince.
IV. The Wild Fruits of California.	XXIV. Vine Propagating and Planting.
V. California Mission Fruits.	XXV. Pruning and Care of the Vine.
VI. Introduction of Improved Fruit Varieties.	XXVI. Grape Varieties in California.
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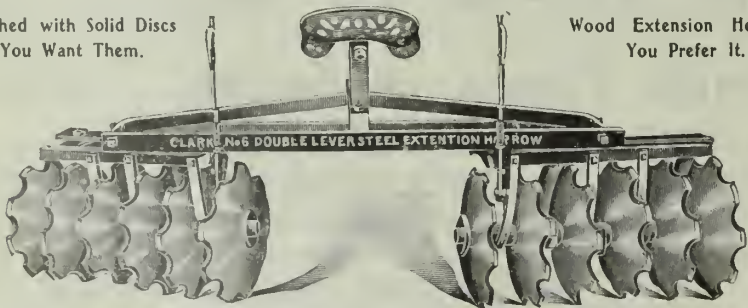
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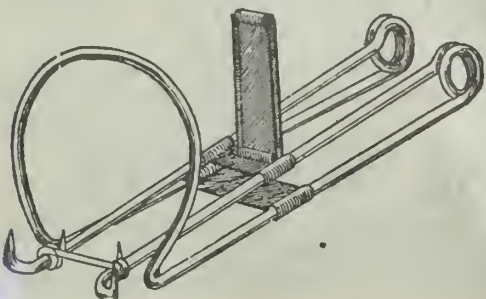
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The following formula and directions, if properly carried out, as prescribed by the Horticultural Commissioners of Sutter county, will produce an effective solution:

Unslaked lime, forty pounds.  
Sulphur, twenty pounds.  
Stock salt, fifteen pounds.  
Water to make sixty gallons.

**DIRECTIONS.**—Place ten pounds of lime and twenty pounds of sulphur in a boiler with twenty gallons of water, and boil over a brisk fire for not less than one hour and a half, or until the sulphur is thoroughly dissolved. When this takes place, the mixture will be amber color. Next place in a cask thirty pounds of unslaked lime, pouring over it enough hot water to thoroughly slack it; and while it is boiling add the fifteen pounds of salt. When this is dissolved, add to the lime and sulphur in the boiler and cook for half an hour longer, when the necessary hot water to make the sixty gallons should be added.

Do not, as some growers are doing, simply put the ingredients together and boil, but follow the above directions carefully, if you desire results from this remedy.

## A Spring Flower Show.

The California State Floral Society will hold a spring exhibition in the grand nave of the ferry building, San Francisco, May 8, 9 and 10, 1902. Early notice is given to enable all intending exhibitors to make stock selections and other important preparations. The Committee of Arrangements ask the co-operation of all growers and lovers of flowers to the end that the spring flower show of 1902 shall not only equal, but shall excel in beauty, variety and arrangement of detail any that has heretofore been held by the society. Medals, diplomas, certificates of honor, society ribbons and cash awards will be made for all meritorious displays. The premium list will be issued about February 1, 1902. Further information can be had by addressing Mrs. J. R. Martin, chairman of committee, 2918 Howard street, San Francisco.

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## DIVIDEND NOTICE.

**OFFICE OF THE HIBERNIA SAVINGS AND LOAN SOCIETY,** corner Market, McAllister and Jones Sts., San Francisco, December 30, 1901.—At a regular meeting of the board of directors of this society, held this day, a dividend has been declared at the rate of three and one-eighth (3 1/8) per cent per annum on all deposits for the six months ending December 31, 1901; free from all taxes, and payable on and after January 2, 1902.

ROBERT J. TOBIN,  
Secretary.

## DIVIDEND NOTICE.

**CALIFORNIA SAFE DEPOSIT AND TRUST COMPANY,** corner California and Montgomery Sts.—For the six months ending December 31, 1901, dividends have been declared on Deposits in the Savings Department of this Company, as follows: On Term Deposits at the rate of 3 1/2 per cent per annum, and on Ordinary Deposits at the rate of 3 per cent per annum, free of taxes, and payable on and after Thursday, January 2, 1902. Dividends uncalled for are added to the principal and bear the same rate of dividend as the principal from and after January 1, 1902.

J. DALZELL BROWN, Manager.

## DIVIDEND NOTICE.

**SAVINGS AND LOAN SOCIETY,** 101 Montgomery Street, corner of Sutter.—The board of directors declared a dividend for the term ending December 31, 1901, at the rate of three and one-eighth (3 1/8) per cent per annum on all deposits free of taxes and payable on and after January 2, 1902. Dividends not called for are added to and bear the same rate of dividend as the principal from and after January 1, 1902.

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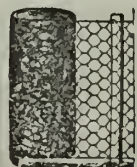
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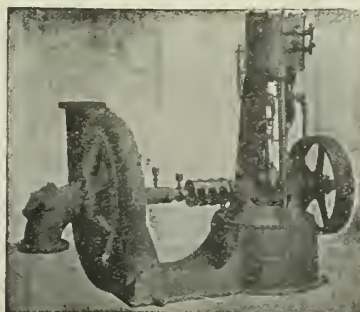
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# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 3.

SAN FRANCISCO, SATURDAY, JANUARY 18, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

### California Vegetables.

After displaying vegetables in sad condition, owing to the inroads of pests and diseases, it is refreshing to turn to the gloriously perfect things which California soil and climate produce from selected seed, well planted and protected from the evils which beset the growing plant. Such are the vegetables which appear on this page—large, crisp and luscious, and all of them improved—that is the result of selection toward the most perfect type by particular care on the part of the seed growers. The fact suggests the desirability of emphasizing the importance of securing seed which embodies, not alone the common inheritance of the plant, but an added element, viz: the patience and intelligence of man, working toward a conception of something better than we commonly have. Fortunately, California has growing conditions which of themselves tend toward surprising development of plants from any seed; but, even with these, there is the greater one of multiplying natural advantages by intelligent selection, so that the seed adds its own endowment by honorable and dis-



Selected Flat Dutch Cabbage.



California Wonder.

Extra Early Snowball.

tinguishing heredity to the favoring characters of soil and climate. The result is that California seed growers and seed dealers are constantly advancing in the volume and character of their business and winning wider recognition in distant markets. The pictures which we take to illustrate this important fact are taken from the new catalogue just issued by the Cox Seed Company of this city, and represent a few of the improved types of leading plants which enter into their trade. Such things are not only distributed in small quantities to individual planters, but are shipped by carloads to distant retailers.

The desirability of the selected varieties shown appears so clearly in the photographs that little need be said. The cabbages are a selected type of the Flat Dutch which has long been a standard for winter use, and the cauliflowers are the Cox California Wonder which comes into condition soon after the Extra Early Snowball, which is also shown, and produces large heads. The lettuce is also an improved variety, producing, when well grown, large, solid, white heads about 7 inches in diameter. The improved Connecticut pumpkin is rather rare in California, where nearly all our pumpkins are squashes, but there are some who hang on strongly to the real thing in the pumpkin line, and the man in the picture is evidently one of them.



Improved Passion Lettuce.



Big Tom or Improved Connecticut Pumpkin.



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E. J. WICKSON ..... Horticultural Editor

San Francisco, January 18, 1902.

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## The Week.

The days have been full of excitement in the commercial phases of agriculture. The Eastern grain markets have been bucking sharply, have thrown some of the old kings against the fence and prices are naturally unsettled. Here prices have been steadied by other strange occurrences. It seems that the people who have been cornering the freight market have found nothing but an open corner after all. Their chartering incoming ships at high rates naturally has drawn other ships to this port and tonnage has arrived in excess of expectations, so that tonnage chartered at 37s 6d comes in on the tide along with tonnage that can only command 28s 9d on arrival. As a side play we have also ships loading on owners' account and we have a dry time which always tends to stiffen prices. The result is that white wheat abroad is weak and lower; wheat here is steady and unchanged. Three wheat clearances have been made during the week with a total of a little over 10,000 tons, worth \$215,230. Barley is firm for feed but shippers are out of the barley market this week. Corn and rye are higher; oats are firm and quiet with light offerings. Mustard is easier for Trieste. Beans are held firm here by the weather conditions, while they are weak at the East. Bran and other millfeeds are stiff and strong. Hay is also strong; higher especially for the higher grades in each class and the whole line firm. Beef and mutton are easier; hogs are firm with a few arrivals from Utah. All desirable fresh butter is firm with no material change, but an upward tendency. Cheese is steady for old and new cheese scarce. Eggs are lower and looking downward. Poultry is quiet after the holiday rush; there is a fair demand but not at very stiff figures. A few potatoes are going out but shipping orders are below local prices; a movement to Texas was stopped by a 10-cent advance here. Supplies are coming from Oregon; two steamers bringing 12,000 sacks. Onions are fairly steady for good; softening and sprouting are becoming apparent. Fine apples are scarce and high. Oranges are easier and offerings larger; there seems to be, however, too few Navels. Lemons are quiet. Dried fruits are firm, offerings light and sales made above quotations. Prunes are going rapidly. Nuts are in light stock and the market is firm for choice lots, but the demand is not brisk. Honey is unchanged, but being talked up on a weather basis. Hops are the same as before, and wool is waiting for the spring clip.

There is a matter which those participating in our farmers' institutes, and finding interest and value in them, will probably feel induced to promote. In the course of an excellent address at a Farmers' Congress held in Virginia in November, Dr. A. C. True, director of the office of experiment stations at Washington, called attention to the fact that these institutes are growing everywhere and increasing in efficiency, general attendance and interest. There is needed, however, a better and stronger organization of the work in hand. The United States Department of Agriculture is desirous of doing something for the whole country in this line, and Secretary Wilson has included in his estimates for the coming year's work an item of \$5000 to secure the services of an expert in institute work, who shall collate and publish information about how to secure the highest success and efficiency in the meetings, to assist in securing good speakers, to visit, as far as possible, the institutes in the different States and give instruction in best methods and policies, etc. It seems very fitting that this should be done. It will be very helpful in making all our institutes as good as the best, and it will serve to unify the whole movement, which is proving so valuable in the advancement of agricultural success everywhere. Whether this is done or not depends probably upon whether the institutes now being held declare themselves desirous of it, and all meetings or individuals can help in the effort by communicating their wishes to their own Congressmen or by communicating directly with Hon. J. Wadsworth, chairman of the Committee on Agriculture in the House of Representatives at Washington. This is not an affair especially for those officially engaged in institute work; it is for the people themselves, jointly or severally, to take up in all agricultural organizations with which they are connected, and in that way impress it upon the attention of the law makers.

The agricultural department of the University of California has just received a valuable addition to its staff in the person of Dr. G. W. Shaw, who has just entered upon his work at Berkeley as assistant professor of agricultural chemistry. Prof. Shaw will render Dr. Hilgard assistance which he greatly needs in some lines in his work, both in instruction and investigation. He will also come into close contact with our agriculturists at the Farmers' Institutes, in which he is an experienced and enthusiastic worker. Dr. Shaw graduated from Dartmouth College in 1887 and soon after entered upon educational work on the scientific side on this coast. He was professor of chemistry at Whitman College and at the Pacific University. After that he served nine years in the same capacity at the Oregon Agricultural College at Corvallis and as chief chemist of the Oregon Experiment Station. During this time he devoted special attention to the beet sugar industry and was instrumental in its introduction into Oregon. For the past two years he has been chief chemist and agricultural expert for the Colorado Sugar Manufacturing Co. Dr. Shaw has always kept close acquaintance with California agricultural affairs, and comes with much enthusiasm into personal contact with them. We anticipate much advantage from his work here.

To lease the grazing lands and to devote the income to arid land advancement and improvement is being vigorously advocated by the organized cattle interests of California. A meeting held in this city this week of the Pacific Stockmen's Association, after doing wisely in selecting Mr. F. C. Lusk of Chico to its presidency, and furnishing him an able board of subordinate officers and directors, devoted most of its time to the public land leasing propositions. A committee was appointed to draft a memorial to Congress advocating the affirmative view. The leasing of the land to prevent overstocking and destruction and to make it an inducement to the tenant to improve and not to destroy the forage, has the favor of Secretary Wilson. He believes that the non-irrigable grazing lands should be leased in small tracts so as to unite the irrigable and pasture lands. If the bill proposed by the Association becomes a law the 400,000,000 acres of grazing land of the country leased under its provisions will yield a revenue of \$8,000,000 annually. That sum would be devoted to irrigation in the arid region and those lands thereby reclaimed for agricultural purposes.

## QUERIES AND REPLIES.

### Frost Injuries and Vine Pruning.

TO THE EDITOR:—Some vine growers are cutting back their vines to seven or eight eyes on the spur, intending to cut back again to the proper short pruning, after danger of frost has passed, to allow the regular fruiting buds to develop. I have found that in pruning some vines long, as an experiment, only the end buds started and the lower ones remained dormant. I then decided it better to prune short so as to be sure the lower buds would start. The frost question was not involved then, but I have wondered whether the pruning long would not have a bad effect on the final growth of these buds. What do you think of it?—VINE GROWER, Fresno.

TO THE EDITOR:—Some growers are chopping off part of the vine canes so they can cultivate the soil, leaving the final pruning until as late as April. There is great likelihood of a frost in April to kill the growth which starts on the ends of the long canes. Which is worse, the bleeding after late pruning or the shock from a late frost?—VIGNERON, Fresno.

Leaving long spurs on grape vines in frosty regions and then pruning back to short spurs when the danger of spring frosts has passed is a good practice. The chief objection to it is that it calls for double pruning, and for this reason is expensive, and many people prefer to take the risk of the frost or else leave the vineyard for very late pruning. This last practice, of course, is objectionable because it defers cultivation so late. If vines are pruned long, allowed to grow from the tops and then not short-pruned afterwards, the lower eyes will not start well, as your experience proved; but if the previously long-pruned canes are cut back subsequently, the growth will come from the lower buds. It is better, if one does not consider the cost of double pruning, to have good buds at the lower part of the cane than to prune short and then trust to the development of latent buds after the early growth has been cut back by the frost. The growth is apt to be more even and the crop better than can be had from such latent buds. Cutting off so much of the canes as interfere with cultivation, cleaning up the vineyard when there is leisure in the winter time, and then finishing the pruning to short spurs late in the season, is a growing practice, and seems on all accounts to be a reasonable one where late frosts are liable to be encountered.

In answer to our second querist we would say, in addition to the foregoing, that loss from bleeding of the vine is more apparent than real. In spite of the bleeding it is surely better, in the way described above, to preserve the lower buds for permanent growth than to prune short and trust to the development of latent buds after the new growth has been cut down by frost. A more regular growth of the vine can be obtained in this way, because when short-pruned vines are killed back there is likely to be some injury by fermentation of the sap, the latent buds do not start regularly, and the crop is less. It is certainly less shock to the vine to lose the new growth that may start toward the end of the canes than to have the growth near the base of the cane treated in the same manner.

### Bermuda Grass for Alkali Land.

TO THE EDITOR:—Has Bermuda grass been satisfactory for lands which will only grow salt grass, and if so where can the seed be obtained?—READER, Tulare county.

Bermuda grass has been favored by those grazing stock on alkali too strong to grow other grasses except salt grass. In the region west of Fresno it has been highly praised by several stockmen. It is not easy to propagate it from seed; in fact, seed is high priced and uncertain in germination. The propagation is usually by pieces of the root, which take hold if plowed in. Only small pieces are necessary. It is common to gather the roots in quantity, run them through a hay cutter and broadcast the pieces. The greatest trouble about Bermuda grass is that it rapidly spreads into better cultivated lands where it is not desired, and it is almost impossible to eradicate it.

### Unfruitful Almonds Again.

TO THE EDITOR:—I have some twelve-year-old almond trees which are very shy bearers. The nut reaches the size of a garden pea and stays on for two weeks or more and then drops off. They are on different kinds of soil—some sedimentary sand, some



gravelly loam, some heavy clay—but they all drop just the same. The red spider comes on very thick. Could they affect the crop, or will a cold wind make them drop? Can it be that there are not enough bees?—READER, Tehama county.

It is possible that the red spider might injure your almond trees to such an extent that the bloom buds of the following season would not have strength enough to set well. There are, however, two other reasons which would cause the dropping of the young almonds. One is frost, which during recent years has been very destructive to the almond crop; the other is lack of pollination. If, however, you have three kinds of almonds planted near together, the probability is that the trouble you experience does not come from lack of pollination, unless you are short of bees, as you think possible. It might be from red spider, it might be from lack of thrift in the trees caused by drying out during the previous autumn, or it might be from frost, as suggested. In most cases the frost is the destructive agency.

Shriveled or Frozen Olives.

TO THE EDITOR:—I do not agree with you about the shriveled olives that have been through the frosts. All such olives here are ruined. They are soft and watery. I do not know of any use they can be put to unless it is the manufacture of indelible ink.—W. T. KIRKMAN, Merced.

TO THE EDITOR:—Thank you for your reply, "Shriveled Olives," in your last issue Jan. 11th. You state the olives may have been damaged by drouth rather than frost. They showed no change in appearance until the next day after the heavy frost of Dec. 11th. A few of the trees are near the garden where they receive some irrigation, and they shriveled as badly as those in the orchard that had had no water. If it had been frost, instead of drouth, would they have regained their plumpness either in water or on the trees? Most of them filled out again upon the trees.—READER FOR TWENTY YEARS, Atlas, Napa county.

We, of course, always run some risk in attempting to explain matters only on the basis of a brief written description and without sight of the objects talked about, but if we did not assume that risk this department would come to an end. We believed the olives, about which our reader at Atlas asked in our issue of Jan. 11th, were shriveled with drouth, and our answer is consistent with that presumption. Frozen olives, such as Mr. Kirkman alludes to, are different and he is right about them, when the freezing has been too hard or the morning temperature too high, for then the fruit is severely injured in structure and practically destroyed. Fruit thus injured would not regain plumpness but would go to the bad. On the other hand fruit even if shriveled from frost would regain plumpness if the thawing out were gradual enough so that the juices could assume their normal condition without rupturing the tissue. Thus the whole matter is a question of conditions and degrees. It may be that the olives at Atlas were slightly frosted and resumed their normal condition, or it may be that the shriveling came from drying, even if some were given garden irrigation. Garden irrigation is often a very dry affair. We have seen olives shrivel even when rains had recently fallen, but the rains were too light to reach the roots.

Dead Branch of Almond.

TO THE EDITOR:—Does the rough appearance of the bark on the enclosed specimens indicate any disease? The two small twigs come from a tree on which all the other limbs are perfectly smooth. This branch has never borne a nut. The rest of the tree bears regularly.—GROWER.

The dying branch does not show any sign of specific disease. It is not unusual for a part of a tree to peter out in this way, and whenever a branch shows such weakness it should be cleanly cut away. For some reason, which perhaps can not be explained in every case, the sap goes rather to other parts of the tree and fails to nourish the weak part. It should, then, be removed as soon as noticed.

Vine Grafting and Planting.

TO THE EDITOR:—Have Mataros been successfully grafted on Rupestris St. George in this State? From some sources I hear they have from others that the union is very poor. Would you also oblige by giving the distance at which the best vine growers plant. I favor 10 feet. Is this too much?—READER, Morgan Hill.

Our observation is that the Mataro both grows and bears well on Rupestris St. George. If there is

adverse experience we should like to hear it. In vine planting the average distance is 8 feet and more vines are planted that way than any other, though both less and greater distances are used to some extent. The distance should be determined somewhat by the vine and the soil—the stronger the vine and the richer the soil the greater distance.

Farming Five Acres.

TO THE EDITOR:—Will you kindly give an estimate of the cost of farming one acre of land for five years in the San Joaquin valley?—JOHN LIGHT, Modesto.

Of course, the cost of farming an acre depends upon what is grown and upon whether the latest and most economical machinery is used. As farming in the valley generally means grain growing we give the following, which is by a farmer who keeps books. As there is no absolute standard of methods, you would probably get nearly as many different estimates of cost as there were men giving them; but perhaps this may answer your purpose. The cost is about at the minimum and the returns very small, because probably of irregular rainfall and the low price of wheat. It is such experience as this which has discouraged growers so thoroughly:

COST OF FARMING ONE ACRE FIVE YEARS.	
Plowing.....	\$ 2 50
Harrowing.....	1 25
Seeding.....	1 25
Harvesting.....	6 00
Hauling.....	1 15
Total.....	\$12 15
Value of grain produced in five years on one acre.....	\$24 90
Cost.....	12 15
Return per acre.....	\$12 75
Deducting interest on value of land—\$20—at 7% for five years.....	7 00
Not balance per acre for five years.....	\$ 5 75

Evidently the land was not worked and seeded every year, but it represents a minimum cost of working, no doubt.

Starting Vine Cuttings.

TO THE EDITOR:—What is the best plan for starting rooted vines from cuttings? How far apart should they be put? Do they require much water?—A SUBSCRIBER, Tulare.

Make your cuttings 8 or 10 inches, according to the joints, and plant carefully in well prepared nursery ground, in rows about 3 or 4 feet apart (if horse cultivation is to be used), planting the cuttings about 6 or 8 inches apart, and leave one eye a little above the surface of the ground. Keep the soil well cultivated so as to retain moisture well and use irrigation water whenever you find by a little digging that the soil is getting rather dry. The amount of water required depends upon the soil, but in all cases be sure there is enough and not too much. The constant presence of adequate moisture will determine directly your success in the undertaking.

San Jose Scale.

TO THE EDITOR:—I found on a few of my peach trees some pest, as you will see by enclosed sample. Please let me know what it is and what I have to do against it.—READER, Fruitland.

Your trees are infested with the San Jose scale. You ought to spray them thoroughly, before the buds begin to swell, with the lime, salt and sulphur wash, the full instructions for the preparation of which were given on page 39 of our last issue. Be sure and follow directions in the preparation of the wash, for its effectiveness depends much upon thoroughly boiling and the application.

Working Over Almonds.

TO THE EDITOR:—Which is preferable, to bud or graft peaches onto old almond trees?—H. A. PENNIMAN, Walnut Creek.

Budding into new wood is easier and more likely to give satisfaction than grafting. Beginning at this time of the year you can try both without loss of time. As the sap flow begins put in the grafts. Whenever grafts fail, bud into the best shoots which start below and remove the others after the growth starts on the bud.

Sword Bean.

TO THE EDITOR:—I send you under separate cover a bean. Please tell me through the PACIFIC RURAL PRESS the name of it and its commercial value, if any.—J. N. JAVAN, Tia Juana.

It is the sword long pod, commonly called sword

bean. It is rather a coarse bean and does not figure in the commercial bean crops, but is used to some extent as a table vegetable, but must be gathered early to be tender and otherwise desirable. The dry beans are only good for grinding for stock feed.

Sweet Potato Plants in Merced.

TO THE EDITOR:—In addition to what you said about starting sweet potato plants, I will give our method. We grow a few thousand acres of sweets in the Atwater section of Merced county. About the middle of March we make a hot bed with fresh stable manure, using considerable straw with it. The manure should be from 12 to 18 inches thick, well packed. Cover with fine loose dirt 8 or 10 inches. Some days afterwards, when the first intense heat has abated and when the top dirt is about 70° or 80°, place small tubers on the bed and cover light at first, adding more dirt later, until they are about 4 inches deep. It is desirable to keep the heavy rains off.—W. T. KIRKMAN, Merced.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending January 13, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The weather has been cold and foggy most of the week, with severe frosts. No rain has fallen. The seasonal rainfall is considerably less than average, but the soil is still in good condition. Plowing and seeding are nearly completed in some sections and progressing rapidly in others. The rain of the preceding week was beneficial to late sown grain and feed, which are both in good condition. Early grain is doing well, and prospects for good crops are excellent. Pasturage is plentiful and stock are in good condition. Work in orchards and vineyards is progressing.

COAST AND BAY SECTIONS.

The weather has continued cold, cloudy and foggy during most of the week, with heavy fogs and no rain. Dry northerly winds have absorbed much of the moisture in the soil. In the central and northern sections grain is in good condition, but making slow growth, and green feed is still plentiful; plowing, seeding, tree planting and pruning are progressing, and crop prospects are very good. In the southern counties farm work is nearly at a standstill, owing to the continued dry, cool weather, and grain and feed are not doing well; some farmers are plowing and seeding, but it is feared the grain already planted will be a failure if rain does not come soon. All sections would be benefited by warmer weather and heavy rain.

SAN JOAQUIN VALLEY.

Cold, cloudy and foggy weather has continued during the week, with no rain. Heavy frosts have been frequent, but have caused no damage. The cool weather is beneficial to orchards and vineyards, but is retarding the growth of grain. In the northern part of the valley early grain is still in good condition, but the late sown is not doing well. In the southern districts the continued cold weather and absence of rain are causing some injury to grain prospects, and pasturage is becoming scarce. Rain is needed throughout the valley. Plowing and seeding are in progress in some places. Orchards and vineyards are in good condition, and pruning is progressing.

SOUTHERN CALIFORNIA.

Warm, dry weather has prevailed during the week, with light northerly winds. Very little farm work is being done, although some farmers are plowing and seeding. Grain and pasturage are suffering from the dry weather. The correspondent at San Diego reports that the rainfall to date is less than in any season since 1862-63. Irrigation water is still plentiful in most sections and is being liberally used in orchards. Orange picking and shipping are progressing. Cooler weather and rain would be beneficial.

EUREKA SUMMARY.—Plowing and seeding progressed rapidly. Grain is healthy and continues making good growth. In some localities rain is needed.

LOS ANGELES SUMMARY.—Light shower Friday back of Redlands and snow in mountains; otherwise warm, dry weather continues in all sections, parching the soil, drying vegetation and discouraging farmers. Feed is about gone.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, January 15, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	.00	15.34	30.13	20.86	54	38
Red Bluff.....	.00	10.36	13.97	12.56	70	32
San Francisco.....	.00	6.33	10.36	9.11	46	36
San Francisco.....	.00	5.94	11.60	12.16	54	38
Fresno.....	.00	3.25	7.02	7.28	46	30
Independence.....	.04	1.38	5.00	3.14	64	28
San Luis Obispo.....	.04	4.56	20.54	8.44	74	32
Los Angeles.....	.04	2.46	7.86	8.51	76	38
San Diego.....	.00	.77	2.45	3.94	76	48
Yuma.....	.22	.02	.02	1.89	76	36



## HORTICULTURE.

### What California Has Done for Horticulture.

By ALEXANDER CRAW, Quarantine Officer State Board of Horticulture. Read before the State Fruit Growers' Convention.

Not only in the United States, Canada, Central and South America, but also in Europe, Australia, New Zealand, South Africa and other countries, California is recognized as the most advanced horticultural country in the world. Representatives from all parts of the civilized world have been sent to this State, in most instances by their governments, to study up our methods of growing fruits, from the delicate citrus products to the hardy apple. Not only is our system of planting, pruning, cultivating and irrigating being closely studied and adopted, but also our methods of picking, curing, packing and shipping have been copied, and other countries have been benefited by the enterprise of our people. Not only have new varieties of fruits been originated here, but some of the older sorts, under our improved system, take on characteristics that commend them to eye and palate of the people of other countries.

In this short paper I will not attempt to enumerate the great number of choice fruits and flowers that have been brought into existence by artificial methods, or the improved system of conducting all horticultural operations in the State, but will confine myself as to what has been done to prevent the introduction of insect pests, also to the artificial and natural methods of controlling those that were imported before any restrictions were placed upon trees and plants entering the State.

**PROTECTIVE LAWS.**—California was the first State to pass laws for the promotion and protection of horticulture. This was in 1881. The horticultural law was amended and improved, as the original law was shown to be defective, or that it could be improved, until now we have a law that is considered as near perfect as it is possible to get through a legislative body. As proof of that assertion, I may state that it has been so decided upon various points by several Superior Courts and by the Supreme Court of the State. Our efforts in this direction have been watched by other States and countries, and now few are without similar laws. A bulletin containing these horticultural laws and court decisions has just been issued by the State Board of Horticulture and can be had upon application.

The act creating the State Board of Horticulture gave that body the power to make regulations governing the disinfection and preventing the spread of contagious tree diseases and fruit pests, and regulations were accordingly adopted aiming to prevent the further introduction of such pests. The people of several States claimed that our regulations were intended to cripple their tree business, so retaliatory measures were threatened if we did not relax our inspection regulations and admit everything in the tree line. Instead of resorting to such measures, however, they became more careful, and the necessity of protecting themselves yearly became more evident to them, so now they have laws of their own, and we hear nothing of retaliation from the other side of the Rockies.

**SPRAYING MACHINERY.**—The adaptability of California soil and climate to the cultivation of fruits was early recognized by the padres and orchards were planted near their Mission buildings and by a few pioneers in other sections. Upon the change in governments and occupation by Americans fruit growing made rapid strides, and upon the completion of the first overland railroad it received a great impetus, and new varieties of fruits and other trees were introduced from all parts of the United States and the Orient. With the plants came their insect pests and diseases. Our climate, that was so conducive to the production of fine fruits, was also favorable to the increase of insect pests, and they multiplied accordingly. Soon their injurious presence was made manifest by the yellow and stunted appearance of the leaves and trees. This was in the early seventies, and the orchardists had practically no method of combatting such pests on the extensive scale that was necessary. Remedies were both crude and expensive, and the manner of applying them was both slow and wasteful. The old time perforated "rose" for use in applying liquid remedies to orchard trees was out of the question, so the Marigot nozzle was invented and manufactured by Wesley Fanning of San Jose. This is now generally known as the "San Jose Nozzle." Instead of the solution being applied to the trees in a heavy shower, it is issued in the form of a fine spray reaching nearly every portion, thoroughly saturating all the leaves and twigs without much waste. This nozzle was generally used when soapy solutions or kerosene emulsions were required. When the "lime, sulphur and salt" remedy was found to be effective, and was used for the "pernicious," or so-called "San Jose" scale, the San Jose nozzle was soon cut by the gritty nature of that solution. Here again our people were equal to the difficulty and the Bean Spray Pump Manufacturers of Los Gatos invented their "Duck Bill" nozzle. The name suggests the shape. The solution at the

outlet strikes against a plate of hard rubber which is more durable than brass. The fineness of the spray was regulated by a thumb screw. The short nozzles made it difficult to reach the tops of the trees, so the late Mr. Titus of San Gabriel, Los Angeles county, thought of a simple way of overcoming this, by attaching a half-inch gas pipe to the end of his rubber hose and on this was screwed the nozzle. The pipe was of varying length, according to the height of the trees to be sprayed. Afterwards a bamboo rod, with a thin brass pipe passing through it, was invented, but it was not strong enough to stand lifting or displacing the dense branches of orange twigs and leaves necessary for the spray to reach every part, so this was discarded. From the old-time syringe and fountain pump used with a bucket for carrying the solutions, Californians advanced and spray tanks holding from 200 to 500 gallons, and drawn by two to four horses or mules, was the next improvement to expedite the work of disinfecting orchards. The Bean and other pumps with large air cylinders was a long step in the right direction, as the compressed air and liquid in them keeps up a steady and continuous spray.

**STEAM SPRAYING.**—J. W. Wolfskill and L. C. Goodwin of Los Angeles were the first orchardists to use steam as the motive power in orchard spraying machinery. This was in 1881-82. Their steam boilers and pumps were used from one to two years and given up because of difficulty in regulating the force. This defect was remedied by W. R. Gunnis and his son, R. H. Gunnis of San Diego, who constructed a very satisfactory gas engine provided with a fly or balance wheel. Now a number of powerful gas and steam spraying machines are in use in this State, requiring very little attention in their management and giving great satisfaction.

**SULPHURING.**—The use of sulphur as a check and remedy for "red spider" and all leaf-eating mites, mildew and all other external fungi upon trees and plants is well known to horticulturists, and was generally applied to the affected trees by the use of sulphur bellows or dusted from a sack at the end of a pole. It remained for Mr. Geo. Ditzler, of the Rio Bonito orchards, Biggs, Butte county, to invent a machine that distributed the sulphur in a wholesale manner. Mr. Ditzler's machine is an ordinary grain-sower, with several attachments of his own invention. The machine is mounted upon a wagon drawn by two horses and operated by gear from the wheels. Mr. Ditzler claims that he can sulphur more trees in one hour than 100 men could in a day and do it more thoroughly. The various parts of the machine are figured in Bulletin No. 67 of the State Board of Horticulture. There is no patent on the device, so any one is at liberty to make it.

**FUMIGATION.**—My experience in the fight against the cottony cushion scale (*Icerya purchasi*), in 1883-4, convinced me that some other method than spraying would have to be devised if we were to be successful in keeping the pest in check, in the orchards and gardens of the State. It was almost impossible to reach every portion of the citrus trees with a spray pump owing to the dense foliage, and the trees in a few months after treatment were as seriously affected as before.

In 1885, Mr. J. W. Wolfskill of Los Angeles and the writer began a series of experiments with gases and fumigation, and succeeded in killing the cottony cushion scales and their eggs. A list of the gases used was published in the U. S. Agricultural report for 1887. Mr. D. W. Coquillett, a former resident of Orange county, California, was greatly impressed with our work in fumigation and conducted some experiments. One of the first was with hydrocyanic acid gas. The tree to which it was applied was badly damaged, but after a series of trials we succeeded in perfecting the work. This was in 1886. After our success, Mr. F. W. Morse was detailed by Professor Hilgard, of the University of California, to conduct similar experiments. He also discovered the same gas and was the first to publish the result.

**THE VEDALIA.**—Spraying and fumigation give only temporary relief. The writer urged the growers to send an expert to Australia to look up the natural enemies of the "cottony cushion scale," as it was from that country that the pest was introduced into California. A meeting was held in the Los Angeles Board of Trade rooms in 1887, nearly all the prominent orange growers being present. Mr. A. B. Chapman, of San Gabriel, was chairman. Ways and means were discussed and a committee appointed to raise funds for the purpose of sending an expert to Australia, to secure the natural enemies. About that time two other Californians entered into the history-making work. The late Frank McCoppin, of San Francisco, was appointed United States Commissioner to the Melbourne Exposition, and in conversation with the late J. de Barthe Shorb, of San Gabriel, asked what he could do in Australia to advance the interests of California. Shorb replied, "Take an expert with you, to find the enemy of the cottony cushion scale, or we are all ruined." Mr. McCoppin generously put aside \$2000 of the funds appropriated by Congress for the use of the Commissioner, and Mr. Albert Koebele, of Alameda, was selected by the U. S. Department of Agriculture to undertake the work, and his discovery and introduc-

tion into California of the *Vedalia cardinalis*, saved the orange and lemon groves of the State and made Mr. Koebele famous the world over.

**OTHER BENEFICIAL INSECTS.**—This is not the only instance of the benefits derived from beneficial insects in checking destructive scale and other pests. The soft brown scale was a very serious pest when first introduced and destroyed bearing orange trees until it was checked by two species of internal parasitic flies. The yellow scale is not feared now, for a parasite from Japan keeps its numbers down. The once dreaded San Jose scale is not so troublesome now—in fact, it can hardly be found in the orchards around San Jose, and no spraying or fumigation has been done for years. A very small four-winged fly belonging to the same order as the others I have just mentioned keeps it in check. The brown apricot scale, that filthy pest of the prune, apricot and peach trees, is rapidly disappearing from the orchards of Santa Clara, Alameda and other counties where its parasite has been established. I can enumerate about a dozen or other internal parasites that have relieved the fruit grower from ruinous expense. We are now at work propagating two other internal parasites that, if we succeed, will be worth hundreds of thousands of dollars to California. One is the insect that keeps the black scale in check in South Africa. I have recently received two boxes containing these valuable insects from Prof. Charles P. Lounsbury, Government Entomologist at Cape Town. A number reached us alive and are now in a glass breeding case containing oleander infested with black scale. They took kindly to their new quarters and I hope will increase. We have to breed them in confinement in order to prevent the introduction of a secondary parasite which preys upon them in South Africa. By keeping the secondary parasites out, we can reasonably hope to have as good, or even better, results than they have in Cape Colony. The other parasite we are now propagating is a very minute chalcid fly that destroys the red scale. This was found in China and introduced upon a small orange tree by George Compere, a collector of beneficial insects and special agent of the California State Board of Horticulture. Owing to the "Boxer" trouble in China at the time of Mr. Compere's visit, he experienced great trouble and risk in securing the tree. We have it in a glass case and the parasites are breeding remarkably well. The scales are more numerous than when the tree arrived from China. This is because we remove the parasites as fast as they breed and send them to infested orchards.

**SUMMARY.**—To California belongs the credit of first suggesting the introduction and propagation of beneficial insects for the purpose of benefiting her fruit growers and farmers.

To California belongs the honor and credit of having furnished the following countries with insects that were of great value to them: Hawaii, Cape Colony, Egypt, Italy, Portugal, Ceylon, Jamaica, Florida and several islands of the Pacific.

To California belongs the invention of many of the best sprays and washes now in use.

To California belongs the credit of inventing and perfecting fumigation of orchard trees.

To California belongs the credit of inventing many of the most approved appliances for fighting pests in the orchards.

To California belongs the credit of improved methods of packing and transportation.

To California belongs the credit of protective legislation for the benefit of our great industry, so beneficial in its operations that it has become the model for other States of the Union and other nations of the world.

And, above all, and the cause of all our advancement along these lines, California must be credited with the most intelligent, progressive and advanced horticulturists in the world.

### Protecting Fruit from Frost.

By PROF. ALEXANDER MCADIE, Section Director U. S. Weather Bureau at San Francisco, at the Fruit Growers' Convention.

With the possible exception of the loss occasioned by insect pests, there is probably no one cause of loss so seriously affecting crops in California as frosts. Notwithstanding statements sometimes published that certain areas are in the so-called frostless belts, there does not appear good reason for believing that any portion of the State may not be visited by frost.

The losses to the fruit crop, both citrus and deciduous, through frost, have been so large that special attention has been given to methods of protecting orchards, and these methods are discussed in detail in the following. With citrus fruits the frosts of December, January and February are to be guarded against, the fruit being ripe and ready for shipment. With deciduous fruits the late spring frosts do the damage. Almonds, apricots, grapes, peaches and prunes are hurt, while in bud or while the fruit is just setting, by the frosts of March and April. The damage depends in all probability as much upon the condition of the tree as the degree and duration of the cold. For example, a sharp frost during the first or second week of April sometimes does less damage if the trees are fairly passed the



blossoming period than the same frosts would have caused occurring about the middle of March.

**THE OCCURRENCE OF FROST.**—The protection of gardens, both vegetable and flower, is also important. The particular frosts affecting gardens are those of February, March and April, and it is pointed out in what follows that the same general principles used to protect orchards should be followed in the protection of gardens. A clear, still night, following thirty-six or forty-eight hours of boisterous north wind, is likely to be followed by frost, particularly if the movement of the air in the given locality has been such as to cause a settling of cold, relatively dry air strata in the hollows or depressions of the land. The formation of frost is essentially a problem in air drainage; and if by any means we can prevent streaks, pools or basins of stagnant, cold, dry air, we can largely prevent frost. Frost, as commonly understood, is the water vapor of the air deposited upon the plant at a temperature below 32°. The damage to plant life is, however, really caused by the falling or rising temperature, and not by the deposit of ice. The water vapor plays the part of an index only. Indeed, the action of the water is preventive. Dry air at a temperature of 32° weighs 563 grains per cubic foot. Water vapor at 32° weighs 2.1 grains per cubic foot at a saturation of 100%. Air at a temperature of 25° F. weighs 572 grains per cubic foot. Given a little time, therefore, on a still, clear night, the loss of heat by radiation from the plant surface and the ground will bring about a settling of the colder air to the bottom. The ground will be covered with frost while thermometers 6 feet above the ground will record 34° or 36° F. Vegetables and flowers, therefore, unless grown upon sloping or terraced ground, are at a decided disadvantage compared with tree fruit in the matter of frosts.

**NATURE OF FROST.**—It cannot be emphasized too clearly that it is the low temperature, and not the solidification of the water, which does the damage. If there be but little vapor in the air, there will be but a light frost apparent, and yet the temperature may be so low as to cause great injury. The so-called hard, dry frost, also called black frost, does, as is well known, even more injury than heavy frosts. Water vapor at 25° completely saturated weighs 1.6 grains per cubic foot. In the fall from 32° to 25° nearly half a grain per cubic foot, if the saturation were 100%, would be condensed, appearing in visible form as frost flake. A certain amount of heat was given off in the transformation of this visible water vapor into ice, and an exactly equal amount of heat (known as the latent heat of vaporization) will be in turn required to change this frost flake back into vapor. We give special attention to this point because it would appear theoretically that the secret of successful protection of garden truck and delicate flowers will be found in this action of water, both in setting free heat at the time the temperature is falling and, on the other hand, in using up heat, thus acting as a retard or break when the temperature begins to rise quickly.

It is now quite generally believed that as much injury results from the sudden warming up of the dormant and thoroughly chilled flower, fruit or vegetable as from the chilling itself. In the work of protecting fruits from frost it has been found very necessary to interpose some screen early in the morning between the sun's rays and the frosted fruit. With flowers and garden truck this can be much more easily accomplished than with fruit. In this respect the gardener has a decided advantage over the orchardist. The following is an excellent statement of how the plant is injured, published by Prof. E. R. Lake in the Oregon Climate and Crop Bulletin, July, 1900:

**HOW FROST INJURES PLANTS.**—"Low temperatures congeal the watery part of the cell sap and also the intercellular water content of the plant. Within certain limits this is not or may not be injurious, providing the protoplasmic contents of the cell are able to absorb the water and do this before the cell structures collapse as a result of insufficient cell turgor. Frequently the frosting of plants is followed by a sudden rise in temperature, in which case much of the water which was part of the cell sap in the normal condition of the plant escapes through the cell wall into intercellular spaces or even from the plant entirely, and thus the protoplasm of the cell, being unable to assume its normal condition, becomes disorganized and decomposition follows."

**METHODS OF PROTECTING.**—Every fruit grower should put himself in communication with the nearest center of distribution of weather forecasts. If possible, he should be in daily communication with some Weather Bureau office. Whenever frost warnings are issued for his locality he should carefully determine the temperature and dew point, as elsewhere described, frequently during the late afternoon and night. A good outfit consists of a metallic thermometer so arranged as to automatically close an electric circuit and ring an alarm whenever the temperature of the air reaches 32°. In addition to a reliable sling psychrometer, there should be some small device for testing the motion of the gentle air currents in the orchard. Too much attention cannot be given to this question of air motion. Many smudging devices have failed to be effective because

of a slow movement of the smoke away from the orchard.

**PROTECTIVE METHODS BASED ON MIXING THE AIR.**—It is well known that lowlands are visited with frost while hillsides and hilltops escape. Every fruit grower should study the topography of his land and plant accordingly. Windbreaks are, as a rule, considered detrimental. No hard and fast rule, however, can be laid down. By planting a windbreak in the proper place, defects in the topography may be overcome and air currents established where otherwise pools of quiet air would have formed. A windbreak dense enough, and so situated as to interfere with any natural circulation and facilitating the formation of still areas or pools, would of course prove injurious.

**PROTECTIVE METHODS BASED ON WARMING THE AIR.**—A large number of small fires, advantageously placed, will raise the temperature of the air several degrees. The Riverside Horticultural Club, testing the various methods which were in use in California, came to the conclusion that wire baskets suspended a few feet above the ground, and holding several pounds of coal or charcoal, made an efficient protector. This method was described by Edward Copely of Riverside, Cal., in several articles published in the Riverside Press of April, 1896. The cost of the wire basket is about 10 cents; and if forty baskets be used to the acre, the cost of fuel will hardly exceed \$2.50. To this must be added the cost of labor during the night and succeeding day in refilling the baskets. This method meets with most favor in southern California. The temperature can be raised certainly 3° or 4° with from twenty to forty of these baskets to the acre. It has been suggested that a number of small oil lamps be used with success for this purpose. Oil pots have been used and make a hotter fire, but the deposit of lamp black upon the fruit is objectionable. Some cheap modification of the ordinary plumber's furnace might possibly be devised, which, by means of a moderate blast, would produce a high temperature.

**SMUDGING.**—Damp straw, old wood, prunings, manure, etc., when burned briskly, furnish an effective smoke; and if the material while burning is doused with water, the result is a dense steamy smoke, which, while trying to human lungs, serves as a screen to prevent loss of heat by radiation and as a barrier between the chilled fruit and a sudden application of heat at the time of sunrise. Wet smudging has been tried in many ways with varying results. There are many reports of failure and, on the other hand, some definite results, showing the good accomplished by this method. Here, as in all other methods of protection, much will depend upon a careful study of the local conditions. Many a farmer smudges so that some neighbor gets the benefit of his work, while his own fruit remains unprotected. All motion of the air should be noted carefully, and this is sometimes difficult where the smoke is very dense. In some orchards sacks of old straw, soaked with oil, are so distributed as to be available for quick lighting. Portable smudges have also been devised.

**SPRAYING.**—After frost, or rather just before a frost has ended, a spraying device can be used to advantage. Its chief function is to prevent a too rapid warming of the chilled fruit. It is said by horticulturists that even the light coating of ice formed in this way does not seriously damage the fruit. It is very likely that the latent heat of solidification set free by the change from water to ice may play a helpful part, but the chief effect is to prevent a too rapid thawing. In other words, both heat and water should be supplied to the chilled plant slowly, and according to the plant's ability to make good use of the same.

**PROTECTIVE METHODS BASED UPON SCREENING OR COVERING.**—All screening or covering devices are in effect modified hothouses, and there is no question but that a thorough protection can be accomplished. The expense is the one objection. Screens are made of light materials, namely, canvas, muslin or light wood work, and have been used with considerable success. There is no question as to the value of the protection, but the expense is considerable. This lath covering may be considered as forming a well-ventilated hothouse.

**PROTECTIVE METHODS BASED ON IRRIGATION.**—Of all methods proposed for the protection of fruit, excepting wire baskets, irrigation has the largest amount of evidence in its favor. It has been tried in many different places with different crops and has generally given satisfaction. Where water is not very plentiful—and this is the case strangely enough in some fruit sections—the method may not always be practicable; but with this exception, there are many decided advantages in the generous use of water. Injury from frost depends almost as much upon the condition of the tree as upon the severity of the weather. Critical periods in the life of the tree can be controlled to some degree by the use of water.

Some fruit growers hold that heat is the one thing that is desired at times of frost, and that the best method is that which produces heat by the simplest and least expensive process. Water, owing to its high specific heat, forms an excellent agency for the temporary storage of heat energy. We have seen

that in the wet smudge an attempt is made to utilize the latent heat of vaporization, and theoretically this has always seemed the most advantageous method. A modification of the wet smudge is steam piped through an orchard.

The latest device for the protection of citrus fruit against frost combines the good effects of irrigation with heating. This is a method known as the warm water method, tried at Riverside last year.

**SPECIAL NOTES RELATING TO FRUITS IN THE SANTA CLARA VALLEY.**—The March and April frosts are especially to be guarded against. Prunes in bud are injured by temperatures of 30°, and later when the fruit is setting are injured if the temperature falls to 31°. Almonds in bud may stand 28°, but in blossom or when fruit is setting 30° is a dangerous temperature. Apricots are damaged when the fruit is setting by a temperature of 32°. Grapes are damaged at 31°. Olives in blossom are also injured at 31°.

**ORGANIZATION.**—Organization is needed in frost fighting as in other matters affecting fruit growing. The fruit grower who will not smudge or fire up when his neighbor is hard at work gets certain benefits from his neighbor's work while doing his best to handicap him.

## THE STOCK YARD.

### Economical Feeding.

TO THE EDITOR:—"A penny saved is a penny earned," is an old motto that farmers may well and profitably bear in mind. In the one item of feeding stock, of various kinds, the saving may amount to considerable—the animals, at the same time, receiving adequate nourishment.

Farmers have this matter of economical feeding forced upon their attention when obliged to make use of feedstuffs other than those raised on the ranch.

As a rule farmers are not overburdened with money. They will find that it pays to see if substitutes, grown upon the farm, cannot take the place of feedstuffs bought in the market.

Hay, for some time, has commanded no high price, according to the farmers' estimate. But even at the low selling figure one naturally wishes to realize all he can out of his crop and will endeavor to feed less, that he may sell the more. That is if he can find suitable substitutes.

**STRAW.**—We question if ever a farmer housed or stacked too much straw in the fall. On the other hand, how many have wished, ere the late spring comes, that they had stacked more and burned less. For a good quality of straw will materially help in wintering young stock. Even cows and horses relish it, now and then. Especially is this the case if it be bright, clean oat straw to which they have access. Of this latter, colts and young cattle will eat large quantities. If this ration is helped out with a small daily allowance of grain, this stock will winter in excellent condition.

**CORN FODDER.**—How many farmers take pains to cure corn fodder? It is often accounted as if this were of little importance and doubtful value. But if corn be sown thick for the especial purpose of fodder, or if field corn be topped, the stalks, well cured, will be readily eaten by stock, old and young, will keep them in good condition and will help out the hay loft wonderfully.

In the far Eastern States, corn fodder, if properly cured, is reckoned as of equal value to good timothy hay. We have an ideal climate for curing corn fodder and there is no reason why larger quantities should not annually be gathered into our barns.

If corn is cut, either at the roots or topped, when the grain begins to glaze, and is well cured, the analysis will show: Dry matter, 57.8; protein, 2.48; carbohydrates, 33.38; fat, 1.15.

Of course it takes time to do all this, but it will pay. Farmers have a satisfaction, not easily defined, if they have when winter comes, be it a wet or a dry one, an abundant supply of fodder for their stock.

**FEEDING WHEAT.**—When bran is \$21 per ton, as it has been for some time, farmers who are accustomed to use this mill product naturally ask if there may not be a substitute of equal or superior value which will not cost as much. For this reason many are feeding wheat which still commands a low figure, according to the producer's way of thinking. Not only is this the way here in California, but thousands of bushels of this grain have been fed this winter in the middle West because it is much cheaper than corn.

One authority says that wheat, when fed to horses, should be coarsely ground and fed on moistened hay, alone or with bran. "For cows it is recommended to crush or coarsely grind wheat and feed it mixed with bran. A ration often recommended is six to eight pounds of bran or six pounds of wheat."

Forty years ago, when wheat commanded 3 or 4 cents per pound, some of our California farmers fed this grain to their teams during the plowing season, when the horses were doing their hardest work of the year. The grain was finely ground and fed on hay, cut fine, and well moistened. Upon this ration,



together with a suitable allowance of uncut hay, the hard working teams thrived.

At the present time some farmers have wheat crushed—as the millers crush barley—at a small expense, say \$1.75 to \$2 per ton. Judiciously fed with cut hay, or even good straw, this makes an economical and satisfactory feed.

It has been demonstrated by practical stockmen that pigs will make rapid and solid growth when fed upon wheat and alfalfa. If the hay is fed, the best way, probably, is to cut it fine with a hay cutter and pour over it boiling water, then covering it for a while in order to steam it. This process will make it much like the fresh cut grass.

In the matter of feeding our stock we do well to study and experiment as to the most economical and, at the same time, profitable methods. The wasteful practices of some of our California farmers would shock our Eastern brethren, who, by saving odds and ends, greatly add to their bank accounts year by year. Why cannot we?

Napa, Jan. 8.

A. WARREN ROBINSON.

## THE APIARY.

### Shade for Bees in Hot Valleys.

Now that bee keeping is constantly increasing in our hot valleys, an account of the shaded apiaries in Arizona, as given by E. R. Root in *Gleanings*, is very suggestive. When it is remembered that Arizona is one of the hottest regions in the United States, one can readily see the importance of providing shade for beehives. But, like all hot, dry climates, that of Arizona is not so insufferable as one might imagine. Notwithstanding the temperature goes up to 110°, and sometimes temporarily to 120° in the shade, one does not suffer from the heat nearly as much as there as he would in the East, with the mercury at 90° or 100° in the shade. Why this difference? It is simply a matter of humidity. A large amount of moisture with a high temperature is killing, but a high temperature and a low humidity is quite endurable. But, moisture or no moisture, unless the hives are shaded combs will surely melt down, and it is absolutely necessary to provide shade. Trees are rather scarce in that irrigated country; and, besides, their shade would not give protection during the whole day; so the bee keepers have found it necessary to construct a substitute in the form of a large trellis, wide enough to shade at least two rows of hives, and long enough to take in 100 colonies, hives spaced about 4 inches apart. But, mark you, these trellises run in the direction of east and west; so when the sun rises in the morning and passes on its onward journey through the heavens, and down again in the west, it never gets a chance to pour its direct rays on the hives.

How THEY ARE MADE.—These sheds consist of ordinary skeleton trellises. The uprights in some cases are 2x4's, and in other cases they consist of poles. In some across the tops a bracing of wire is used; in others, light strips of wood. All that seems to be needed is a structure strong enough to stand the winds and support a bed of dry weeds, palm leaves—any sort of shrubbery that can be easily obtained. Of course, it dries up under the influence of the sun, but that makes no difference, for all that is needed is something to break or split the rays of old Sol. The loose stuff is piled loosely on top, and then the whole is held down by means of wire. In some cases end braces are put up to prevent the general collapse of the structure endwise. Then every one of these is further braced across the top by means of strips of wire. No attempt seems to be made to shut out the light entirely by piling up grasses or weeds, as that would be unnecessary. All that is required is simply to break up the sun's rays. Even if the light does streak through, it does no harm.

Every apiary that I visited in Arizona was covered with this kind of trellis, with one exception; this was the case of a beeman who had his bees under some great cottonwood trees along an irrigating ditch.

A NEARER VIEW.—The long rows of hives in perfectly straight lines, under a shade, are alike comfortable to man and his bees. Indeed, it is really cool and delightful under these sheds, especially in a light breeze; and, as these structures are very cheap, I wonder that more of them are not in use in other hot, arid climates. The bee keepers of Texas, central California and of the whole South would do well to adopt them. In the Arizona sheds one can perform all necessary work with the bees, because the hives face outwardly, leaving a nice clean pathway in the center, unobstructed by the flight of bees. Combs can be taken out and strewn around without the least danger of the sun doing any mischief; and it is indeed a pretty sight to walk down one of these long avenues and watch the bees piling in from the alfalfa fields.

Mr. Johnson numbers his posts. One post, for instance, will be marked 344, and the next one 348. Between these numbers there will be four hives about 4 inches apart; so it is easy to see which hive, for example, would be 345 and which 347. It is not, therefore, necessary to tag the individual hives.

All of the hives under the Johnson sheds are of the Jumbo type—that is to say, they are 10-frame

Langstroth hives, but 2 inches deeper. Their owner seems to be satisfied that this big hive is better for him than the regular Langstroth depth; and the consequence is that all his hives—some thirty-seven—are of this big size.

The space between the sheds, as well as under them, is entirely free of grasses or weeds. To bring about such a result in the East costs more in labor than it is worth. But in an irrigated country it is perfectly simple and easy—why, just cut off the water and vegetation of all kinds will die off. It is the rule, then, that no water is allowed to flow near an apiary—result: a patch of ground as clean as a floor.

William Rohrig of Tempe has sheds that differ from Mr. Johnson's in that, instead of using the strips of wood across the top to support the weeds and grass, he makes use of wire braided back and forth. He finds that this answers every purpose, and is somewhat cheaper.

Usually near one or the other of these long sheds there will be an extracting house. Sometimes it stands about midway. This is particularly the case where there are two or three rows of sheds, and it is desirable to have the extracting house at a point where it will save steps as much as possible.

REDWOOD HIVES.—All through Arizona I found a decided preference for hives made of redwood rather than white pine. I was shown hive after hive of the same age—that is, made and put up at the same time—one of redwood and one of white pine. The very dry climate would affect the latter very seriously, while the former, in nearly every case, seemed to be sound and good. This California redwood is quite expensive and costs more than white pine. Still, the bee keepers of that country, if they cannot buy such hives of supply manufacturers, make their own hives on foot-power buzzsaws and horse-power machines, because they find that redwood hives are cheaper in the end, even if they are not so well made. But redwood will not do for brood frames, as it is too brittle. As a rule, these are made of white pine and shipped from the East.

## THE GARDEN.

### Roses for Southern California.

By J. E. E. NICHOLS of Floral Park at the Pomona Farmers' Club.

Although the rose will grow in any fertile soil, with but little attention, the greatest measure of success comes to the grower who uses care and judgment in choosing a favorable location, preparing the soil and in selection of varieties.

SITUATION.—Roses may be planted in single rows, along roadsides, in nooks and corners, or almost anywhere our fancy dictates. Some variety will be found to make that spot more cheerful. Experience teaches, however, that our more delicately tinted varieties should be planted in an open, sunny spot, protected as much as possible from high winds. It is a good idea to plant in beds, not mixed with other flowers. Don't plant too near large trees that exhaust the soil and exclude the sunlight.

SOILS.—The best soil is a rich, fibrous loam. If the natural soil is poor, remove about 18 inches in depth and fill in the hole with good soil mixed with about one-third its bulk of well-rotted stable manure. Under no circumstances use worn-out soil. If there is hardpan, it must be broken up. If drainage is poor, dig more soil from the hole and fill in 3 or 4 inches of broken brick or gravel. This must not be overlooked, as a soggy soil is always injurious. Fine-ground bone meal is an excellent fertilizer for roses, but should be used sparingly, and not at all on young bushes. Apply two or three handfuls to the older bushes twice a year. Sheep or hen manure is first-class, but use caution or you will burn your bushes.

PLANTS.—In selecting your bushes use care and secure good ones of varieties suited to your locality. You would better have one rose, and that a choice one, than a dozen of doubtful origin.

The best bushes are cold grown, either in pots or open field. Such bushes are grown from cuttings of well-ripened wood, and have much more vigor than those rooted and forced by bottom heat.

Field-grown bushes are excellent, but can be planted only during the wet season with any assurance of success. They should be well cut back, even to two or three eyes. Most planters dislike to sacrifice so much top, prune lightly, or not at all; result, dead bushes.

Pot plants are always well supplied with fibrous roots and in good condition to plant at all seasons. They need no pruning at planting time except to improve the shape or encourage more rapid growth.

PLANTING.—The distance apart to plant depends upon what you wish to accomplish. For a hedge, plant 3 feet apart in single rows; if around a drive or single rows in yard, 4 to 6 feet apart; if in beds, 6 feet apart each way will be about right.

Plant with care; don't dump your bushes in the holes as you would potatoes in a bin. Have no fear of getting them too deep in light soils. Have the neck fully 2 inches below the surface, if a pot plant. Loosen the ball before planting, irrigate well and

rake over when dry enough. They should have water again in from one to two weeks, according to the conditions of the weather. Keep your bushes growing vigorously the first summer. Water about every two weeks in hot weather and cultivate thoroughly. There is more danger of a young rosebush blooming itself to death than there is of its growing too much. Don't allow more than one-fourth of the flower buds to develop; cut out any straggling branches, and keep your bushes in good shape. Prune about October. Cut out from a half to two-thirds, leaving only the strongest stalks, and shorten what you leave fully one-half. Water if necessary, and you may expect plenty of Christmas roses, providing the weather is favorable.

PRUNING.—The second summer, after the spring blooming period, let your bushes rest. Give but little water, but don't let them die. You can determine by the nature of your soil how little water they can live on. A retentive soil will require less, a sandy soil more. In October prune; cut out the old and leave the strongest new stalks, cutting back fully one-half. Follow much the same plan year after year. This applies to rose bushes only. Climbers must be handled differently; thin out, but don't remove any old wood unless it is dead or you have a more vigorous young shoot to take its place. Slow growing, weakly constituted roses would grow for several years before requiring much pruning. Fortunately for the amateur, most of our handsomest varieties have strong constitutions. The exceptions had better be let alone.

PESTS.—Roses in a vigorous growing condition are seldom troubled by any disease or insects. If the aphid or green fly is troublesome, a good hosing will usually suffice to clean the bushes; or tobacco solution, made about the strength of weak tea and applied with a plant sprinkler, will do the work. A good hosing of pure water will destroy the red spider.

Mildew is a fungus disease, caused by sudden changes in the atmosphere, and generally makes its appearance in dull, cloudy weather. Flour of sulphur is said to be a sure remedy, dusted on the leaves when wet.

Blighting of the buds can sometimes be overcome by liberal thinning.

CLASSES OF ROSES.—Florists divide the rose into two grand divisions: First, June roses, which rarely bloom but once a year; second, Perpetuals, which bloom several times during the season, and many of the varieties monthly.

According to their habit of growth, roses of all classes may be described as climbers, half-climbers, intermediates and dwarfs.

JUNE ROSES.—In the first division will be found nearly all the wild roses and a large number of cultivated sorts. We will briefly describe a few of the more important species:

Rosa Setigera, the prairie climbing wild rose of the middle and south United States, very tall and stoutly armored; flowers double, deep rose to white; partly the original of the old Queen of the Prairie.

Rosa Rubiginosa, the sweetbriar, has peculiar russet glands on the under side of the leaflets, giving out a rich, aromatic fragrance.

Rosa Cinnamomea, the cinnamon rose, a near relative of our common wild rose, blanda, has pale red, cinnamon-scented flowers; double, but not showy.

Rosa Sinica, the Cherokee rose, naturalized in the Southern States; from China; a well-known and valuable species; tall climber, armed with strong, fish-hook thorns; glossy, evergreen foliage and large, single, white flowers; very desirable for planting in the background as a screen or for hedges.

Rosa Banksiae, the Lady Banks, a valuable climber, thornless, with small, glossy leaves, and umbels of small, double, white or buff; violet-scented flowers.

Gold of Ophir, a very highly prized climber in this locality, belongs to this division, as do nearly all the hardy climbers and bush roses, including the Ramblers, the Memorials, the Rugosas, and many of their hybrids, all of which are practically worthless for planting in this locality.

PERPETUALS.—In the second grand division we find: Rosa Damascena—Damask rose. Ancient Damascus gave its name to this rose. It is said to have been the favorite flower of Venus, and was formerly white, until she, being in haste to assist her dying lover, pierced her foot with a thorn, and some of the blood falling on it changed its color from white to red.

Rosa Muschata—Musk or Muscat rose—native of north Africa, also found in south Asia, where it ascends the Indian mountains to 11,000 feet. It is said to be always in bloom; the flowers are large and white, bloom in clusters, and have that peculiar musky odor from which it derives its name.

Rosa Centifolia—Hundred-Leaved or Cabbage rose—perhaps derived from the French or Provence rose; has oval leaflets, with glandular teeth or edges; calyx clammy, with odorous glands; the flowers are large, full and double; color, rose purple or of various shades, rarely white. Moss roses are abnormal state of the same species, with the glands and bristles of calyx developed into a moss-like substance. The above species are largely grown for rosewater and attar of roses.

The Hybrid Perpetual is a misnomer in this part



of the country. The bushes are usually vigorous growers, but the blossoms are few and far between. If you have a good stock of patience, will give extra care and feed liberally, you will be rewarded by a display that will gladden the heart. Our very best red roses are in this class—Black Prince, Prince Albert, Charles Darwin, and others.

Polyantha or Fairy roses are a lovely class, nearly all of vigorous growth; medium sized, double flowers, in clusters; very free bloomers. Cecile Bruner is a good example of this class.

The Hybrid Teas are the result of a union between the Teas and Hybrid Perpetuals, and are famous for their brilliancy of coloring and exquisite fragrance, but very few of them do well in this locality. The La France set are examples of this class, of which Duchess of Albany and climbing La France are the most desirable.

Rosa Indica—India or China rose—comprises many classes and more varieties suited to southern California than any other species.

Bourbon and Bengal roses are mostly strong, healthy growers and free bloomers, especially in the fall months. They have small to medium flowers, and in many respects are very desirable. Hermosa Agrippina and Archduke Charles are examples of this class.

The Tea rose is the grandest class of all, comprising several hundred varieties. The general characteristics of this lovely class are vigorous growth, large, handsome foliage, long, strong, highly colored flower stems, surmounted by numerous large, full, pointed buds of the most delightful color effects and strong tea fragrance. Visit a well-kept garden and observe Marechal Niel in its modest beauty; Lamarque in its purity; the gorgeous French lady, Claire Carnot; The Bride in blushing beauty, and her lovely maid; the bride of a sunbeam, Marie Van Houtte, in bewildering splendor; the Sunset in all its glory; Mamon Gochet, the superb pink, and Niphetos in its snowy whiteness.

## Agricultural Review.

### ALAMEDA.

A NILES ORCHARDIST SUES A COMMISSION HOUSE.—Two suits of E. A. Ellsworth, a Niles orchardist, against the California Commission Co. of San Francisco, for the sum of \$3500, claimed to be due upon bills of exchange which were accepted but later dishonored by the company, are on trial before Judge Hall. The plaintiff alleges that the amount above stated was due upon the purchase price of apricots and prunes sold by him to the company. As a defense, it has been set up that the company did not authorize its manager, J. Wolff, to act for it in the issuance of the bills of exchange. O. I. Wise, attorney for the company, tried to show by authorities that an agent's acts did not bind a corporation unless he was specially authorized to do the specified acts. In reply to this, Attorney Oliver Ellsworth contended that Wolff had acted for the company during the entire dealings with E. A. Ellsworth, which involved sales of apricots and prunes aggregating over \$50,000. E. A. Ellsworth bought up the crops of almost all the prominent orchardists about Niles and then sold the fruit to the California Commission Co. It is claimed in his behalf that the commission company lost some money on the deal and is trying to recuperate by refusing to honor the bills of exchange drawn on it.

### BUTTE.

PULLING UP ALMONDS ON ACCOUNT OF FROST.—Oroville Register: E. C. Cummings, who owns an orchard in south Thermalito, has found the almond trees unprofitable on account of frost. He has determined to remove all of his almond trees, which will cover about twenty acres, and plant peaches on the land. Clifford Crane has a contract for pulling up the trees. His stump puller will remove about one acre a day. We learn that the wood from these nine-year-old almond trees will pay for clearing the land, cutting the wood by hand and buying and planting the peach trees. Here is a lesson on tree planting for some one who wishes to plant trees for wood alone.

FINE HERD OF CATTLE.—Oroville Mercury: Recently the Ord ranch vaqueros drove through Gridley from Butte creek to the ranch the largest band of cattle seen here for a long time. The herd consisted of 2000 head of young

cattle, all but perhaps a dozen coming two years old next spring. They made a pretty and an interesting sight. The cattle will be fed on the ranch the balance of the winter, or until the feed on Reymann & Evans' 7000-acre pasture on Butte creek starts again.

### KERN.

FAMOUS HEN CASE ENDED.—Bakersfield correspondence Los Angeles Times: The locally famous case of J. J. Van Damm vs. Clinton E. Worden, a wholesale druggist of San Francisco, has been dismissed. The opposing parties own contiguous ranches on the Weed patch, Worden producing grain and cattle, Van Damm chickens and eggs. The litigation which has finally been ended arose several years ago, and had for a basis the allegation of the poultryer that the stock of the druggist had damaged his alfalfa patch where he ranged his hens to the extent of \$450. Prominent attorneys were engaged on each side, and a number of determined battles were fought out in the Justice Court before the case reached the Superior Court, where it hung fire for months, not being given its finish until to-day. Worden won in the end.

### LOS ANGELES.

REDUCED CROP FOR SOUTHERN COUNTRY.—Los Angeles, Jan. 11.—The Southern California citrus crop will be lighter than last year. The total for 1901 was approximately 24,000 cars. The total this year will not exceed 20,000 cars. The aggregate expected this year was 25,000 cars. Frost and the sand storm a few weeks ago destroyed between 4000 and 5000 cars of the new fruit in bearing. The estimates quoted are from official reports gathered by the Southern Pacific and Santa Fe railway companies. Unless there is rain in the next few days the hay and grain crops in this section will be past saving.

### MENDOCINO.

WHITESBORO CREAMERY OFFICERS. Beacon: The annual election of officers of the Whitesboro Creamery Co. took place recently. The directors elected are D. M. Gray, George Cameron, J. A. Satori, Peter Nonella and P. Smith. J. A. Satori was elected president and M. D. Gray secretary and treasurer. It is the intention to have the creamery resume operations about February 1st.

### MONTEREY.

A FINE BEET CROP.—Salinas Index: H. P. Rhode this year raised from 122 acres of land near the Spreckles' factory 2482 tons of sugar beets, an average of a fraction over twenty tons to the acre. Deducting one-fourth, which went to the Spreckles Co. for rent of the land, Mr. Rhode had 1861½ tons of beets left for himself, which, at \$4.50 per ton, brought him \$8374. After paying all expenses, Mr. Rhode easily cleared \$6000 for his season's work.

### NAPA.

PUMPKINS.—TO THE EDITOR: I am a reader of your paper and see that every county can boast of raising fine pumpkins. I live in Napa county, but get my mail at Winters, Yolo county. I raised last year, 1901, on my place three of the largest pumpkins I have ever seen raised in Napa county. One weighed 124 pounds, another 150 pounds and a third 180 pounds. They were over 3 feet long and of a beautiful golden color. I also have one of the finest orange groves in Napa—fifty trees in full bearing—trees of all varieties.—N. VIEU, Winters.

### SAN DIEGO.

SALE OF CITRUS LAND.—National City Record: The well-known Clark property in Paradise valley, comprising twenty-seven acres, and the twenty acres on Twelfth street, together with forty acres orange and lemon orchard, all belonging to Ralph Granger, have been sold to J. D. Chambliss of Los Angeles. The price paid is \$20,000.

### SAN JOAQUIN.

BIG DEAL IN FARMING PROPERTY.—Stockton Independent: A big sale of farming lands was closed a few days ago when H. D. C. Barnhart of San Francisco transferred to Dr. W. G. Wallace of Stockton two ranches, known as the Barnhart home place, north of Stockton, and the Jack place, near French Camp, the Barnhart ranch having 480 acres and the Jack place 370 acres. The consideration was about \$40,000, or \$47 an acre. The two ranches are located near irrigation canals and water for insuring crops can be carried to either place at small cost.

COST OF PLANTING A VINEYARD.—Lodi Sentinel: Any of our Lodi land can be plowed 12 inches deep, cross plowed, harrowed, staked off, planted to grape cuttings 10 feet apart and kept in thorough cultivation for the first year for less than \$10 per acre. With a little care \$8 per acre will do it. The second year, count on about \$7.50 to \$8.50 per acre.

Pruning and the planting of 5% or 10% of the vines that failed to start will be extra items, but \$8.50 ought to cover the second year in first-class style. The third year the expenses will be about the same as that of the second year. Sometimes young vineyards, the third year, pay all the third year's expenses and a profit.

GEO. D. ROBERTS DEAD.—The death is reported in New York of George D. Roberts, the man after whom the 6700 acres of reclaimed land known as Roberts island was named. When Mr. Roberts owned the tract it was far from being as valuable as now, the work of reclamation having just been begun. He disposed of the land in 1874. The life of Roberts was as exciting as the greatest romance. He had made and lost fortunes in every quarter of the globe. He discovered the borax deposits in Death valley, had mined in South America and made ventures into Siberia. Later he was in Alaska. He was a natural leader of men and possessed an indomitable will in spite of his natural kind-heartedness and liberality. He was 73 years of age at the time of his death and was an active man up to the last. He leaves relatives in this and other States.

FARMERS CONFIDENT.—The farmers of this section have great faith in the weather and assert that the present drouth will be made up for later on in the season by a plentiful rainfall at the time when it will do the most good and result in good crops.

### SANTA BARBARA.

DRIED OLIVES.—Los Angeles Times: "A large crop of olives is reported for southern California," writes O. N. Caldwell of Carpinteria, "and some of the growers are not sure what disposition can be made of them, as the pickle industry can take but few and the oil mills are so few and so small that many olives will be lost if some way does not open for their disposal. If properly dried, they can be kept until the mills are ready to use them. They can be dried upon prune or raisin trays, but must not be spread too thickly or they will sour. The trays should be piled one upon the other, with spaces 1½ inches between for the air to circulate. They can be dried well in the shade, if air can circulate through and over them. One tier of olives on each tray is sufficient, and the fruit should be very ripe. If properly dried, they can be kept in sacks until time and opportunity comes to work them up."

### SANTA CLARA.

NURSERYMEN PREPARING FOR BIG SALES.—San Jose Mercury: The nurserymen are opening their sale yards and preparing for the season's business. If the usual rains come during the tree planting weeks this business will be large. Such, at least, the nurserymen say without hesitation. This statement is made by all of them, and it seems to be agreed that with the rains more trees will be planted than during any one season for several years past. The French prune remains the popular fruit, or rather, fruit tree. At all the sale yards the nurserymen say that their orders for this tree are far and away ahead of the orders for any other variety of tree. Then come peaches, apricots, pears and cherries in the order named. Where a rancher has good apricot or peach land these fruits are chosen largely. Pears are also in demand where the land owner has soil particularly adapted for the fruit. But it is the prune, the fruit that has made Santa Clara valley famous, that the great majority of ranchers seek.

### SANTA CRUZ.

HEAVY POTATO YIELD.—Watsonville Pajaronian: From thirty acres of ground in Lindley district, near Pajaro, John E. Trafton gathered 6543 sacks of potatoes—218 sacks to the acre. It is a wonderful showing, and it came in a year when such crops count—when spuds are of high value. The value of the crop is estimated at about \$260 per acre.

### SHASTA.

WAR ON BUGS.—REDDING, Jan. 9: The horticulturists of Shasta county have declared war against the codlin moth, scale and similar pests. A petition of the fruit growers of Happy valley and Anderson was read to-day to the Supervisors asking that board to appoint a Board of Commissioners, consisting of three members, as provided by law, to investigate the ravages of the insects. The Commissioners are to receive \$4 per diem and expenses during actual service. The appointment of a commission was temporarily deferred.

### TULARE.

BEE KEEPERS MEET.—Tulare Register: The Tulare County Bee Keepers' Association met Wednesday in Tulare and elected the following officers to serve the ensuing year: President, R. Hyde of Visalia; vice-president, J. F. Bolden of Tulare; treasurer, C. F. Lawless of Vi-

salia; secretary, C. W. Tompkins of Tulare. The Board of Supervisors will be asked to authorize the bee inspector to inspect all apiaries brought to the county, to be certain that there is no foul brood among them. The fear is that foul brood will get into the trees where bees have hived themselves, in which case it will never get out. It has been found that all the cases of foul brood that have been developed in Tulare were imported. The past year was only a moderately prosperous one for bee keepers.

KILLING OFF THEIR LAMBS.—Sheep men in this valley are finding it necessary to sacrifice some of their new born lambs in order that others may thrive. No matter how much dry feed there may be, it is said that without considerable green feed the ewes can not furnish more than sufficient milk to sustain one lamb. As green feed is very scarce, where the ewes drop two lambs, the weaker of the two is put to death and the stronger is allowed to take its chances.

LOOKING FOR PASTURE.—A man by the name of Mitchell has been here from Los Angeles for the past few days making inquiries regarding grazing lands. The continued dry weather in the southern part of the State has made it almost certain that feed for stock will be a scarce article.

CITRUS ORCHARDS NOT INJURED.—Mr. John Tuohy spent several days of Christmas week looking over the citrus orchards around Lindsay, Exeter and Porterville. He made close observation of the trees in order to ascertain the extent of the damage done by frost, and found less injury than at this time in any previous year. The gathering of fruit is more nearly completed than heretofore at this time of the year, and thus a smaller percentage felt the frost bite. He found no trees to be materially hurt, with the exception of some nursery stock that was particularly exposed. In the orchards tender shoots have been nipped, but most of these would have been cut away in pruning. The citrus orchards everywhere are thrifty and the outlook for the next season is all that could be desired.

STOCK GROWERS' ASSOCIATION.—Porterville Enterprise: The annual meeting of the Central Stock Growers' Protective Association was held in Visalia Saturday, but there not being a quorum present the meeting adjourned to meet at Fresno, April 5th next. The executive committee of the Association then met and elected the following named as members of the Association: C. A. Turner, J. R. Reed, C. W. Clark, Fred Griffith, F. M. Frazer, W. O. Burr, J. F. Warren, W. Martin, Mrs. M. J. Campbell, J. Goldman & Co., C. M. Blow, L. V. Montgomery, F. J. Peacock, Dr. N. P. Duncan, Arthur W. Clark, H. M. Bernstein and Philip Erwin, making the total membership of the Association 146. On motion it was ordered that delinquent members be notified that if their assessments are not paid on or before April 5, 1902, they will be dropped from the roll. The action of the Association in joining the National Live Stock Association was ratified and it was ordered that the assessment levied by that Association be paid.

### OREGON.

BIG RABBIT DRIVE.—Pendleton, Jan. 4: Four thousand rabbits were killed in a drive at the mouth of Butter creek, in this State, in which 500 people from eastern Washington and Oregon towns participated. Special trains were run from Spokane, The Dalles and Heppner. The people formed in line 3 miles long, and at a signal moved forward, driving the rabbits between the wings of wire netting fences. The wings were each half a mile long, and converged, the opening being left for the rabbits to pass into an enclosure. The rabbits were scarce at first, but as the line narrowed they grew more numerous and soon the killing commenced. No guns were allowed, clubs being used. The rabbits finally ran into a pen like sheep. A number were captured alive to be used as targets for gun clubs. The rest were slaughtered, and at the end nearly 4000 were accounted for.

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## AGRICULTURAL ENGINEER.

### Mountain Roads.

NUMBER VI.—CONCLUDED.

JAMES W. ABBOTT in Year Book U. S. Dept. of Agriculture for 1901.

All rock retaining walls for mountain roads, when laid up dry should have a batter of one horizontal to two vertical. They should only be used where the filling behind them is coarse rock. If used to hold loose material with a batter of one to two, they may be gradually crowded out and the bank give away. If made less steep than one horizontal to two vertical to hold loose material, the method is too expensive to be ordinarily practicable. Coarse and rough and discouraging as heavy slide may look, the very best results may be obtained in it if the entire process is accomplished carefully and conscientiously. It furnishes an absolutely solid, perfectly drained road foundation, is unaffected by the elements, and requires less outlay for repairs than any other variety of mountain road.

Probably the most perplexing material which the inexperienced road builder encounters in building a road is fine slide rock. It appears to be so utterly unstable in every way that he does not know how to attack it, and it seems impossible to obtain either definite or satisfactory results. He can not plow or scrape it. Neither he nor his animals can keep their footing in it. Fortunately, patches of slide rock are never very long, and while the process of making a road across it is tedious and somewhat expensive, it can always be successfully accomplished.

The following instructions carefully observed will always yield satisfactory and gratifying results:

Stake out the grade line, setting the stakes about 25 feet apart and driving them down as firmly as possible. They will stay in place for a time if put in deeply enough. Slope stakes in fine slide rock are useless. As it always stands at about the same slope (35 degrees), the process is very uniform.

For a single track, put up another row of stakes vertically 7 feet below the grade stakes; for a double track, 10 feet vertically below. These lower stakes determine the foot of the cribbing which must hold the road. It is thus constructed: The logs should never be less than 10 inches in diameter at the small end, and the larger the better. The crosspieces should be uniformly 8 inches in diameter. That kind of available wood should be selected which experience has shown will rot most slowly, and all bark must be carefully removed. The logs need not be of any definite length, but the courses should always break joints. Now, beginning at the lower row of stakes with pick and shovel, make a bench, and on its outside edge carefully bed the bottom log. Then dig into the bank and bed each crosspiece. These should be 5 feet apart from center to center, with cross notches to fit triangular edges in the logs, just as house logs are fitted together. This notching should be done with much care to permit the logs to just touch, so that the crosspieces may be weakened as little as possible. The proper length for these crosspieces is 8 feet. They should never be bedded level, but always with a downward slope into the bank. With time and patience the lower row can be properly bedded and a good foundation for the cribbing secured. A dozen pointed inch steel bars driven in a row 3 inches apart, sloping into the bank, will help

materially to hold back the slide while digging to bed crosspieces. Proceed to build up the cribbing, filling in with slide as the work progresses, remembering that the batter of the structure should be one to four.

When grade line is reached, there will be a 10-foot roadbed for single track and 16 for double track, fairly solid on the start and rapidly compacting with travel. Consolidation will be effected by a light dressing of some fine clayey material, if accessible, but this is not indispensable. Every road across fine slide must have careful attention. For all time fine slide will run down onto the roadbed, and it must be shoveled out occasionally, but this will not be a serious item of cost; in other ways the roadbed will be very satisfactory. It has natural drainage, the best of material is always at hand to fill ruts and chuck holes, and a hard, even surface can be maintained. The road grows a little wider each year. Cribbing thus constructed will last many years, and when it does finally give out, it will be found that a substantial foundation for the new road can be obtained without going nearly as deep as at first.

**CORRUROY.**—In laying out mountain roads we often encounter a spongy soil filled with water, especially above timber line. This almost invariably proves to be shallow with a substratum of good road material. This surface soil must be removed and a system of drainage adopted to keep surface water from running onto the roadbed. Occasionally corduroy is economical to meet such conditions, but it is a very undesirable expedient, and should be adopted only in extreme cases.

As in cribbing, all corduroy material should be the most durable to be obtained and the bark removed. The stringers should be not less than 10 inches in diameter, 30 inches apart from center to center, carefully bedded to an approximate level, and their tops adjusted for uniform contact with the covering by the use of a long straightedge and adz. A row of 2-inch planking on each side, thoroughly secured by long spikes to each crosspiece, will prevent its rolling. If a crosspiece is occasionally bolted to its outside stringers, there will be no creeping. Lines should be carefully hewed for wheel and horse tracks. This is often overlooked, and corduroy then becomes an unbearable nuisance. Another mistake often made with corduroy is getting it too narrow. It ought never to be less than 12 feet wide for single track and 18 feet for double track.

A thorough system of both cross and longitudinal drainage must be adopted to protect the corduroy from quickly rotting and to keep its foundation from settling unevenly.

Rollers can rarely be used to advantage on ordinary mountain road grades, which, if properly constructed, will soon pack hard under the wheels of heavy teams. If wide tires were required by law, roads would be protected, heavier loads could be hauled, and expenses of maintenance and operation much reduced.

**DRESSING.**—All mountains are made of rock, the soil with which they are in places covered being merely a product of rock decomposition and water concentration. We can generally find a rock dressing prepared by nature within convenient distance of a mountain road. We sometimes find a complete material in one place and sometimes get better results by mixing two kinds. A hard rock in angular fragments makes an excellent road covering if we put some suitable fine material on top of it. Two inches is the maximum diameter allowable for any

piece of road-covering material. Where the fragments are larger, it should be screened. Sometimes it is best to mix two kinds of rock, one hard and durable and the other disintegrating more rapidly through wear and chemical decomposition. Nothing ever takes the place of a rock covering for roads. It can always be cheaply obtained in a mountain country. If nature does not furnish a suitable preparation of it within economical distance, it can be cheaply prepared. Nearly any mountain county can secure a portable crushing outfit for not to exceed \$500, and can find material to use it on within convenient hauling distance of any road.

Most mountain roads at first require dressing only in stretches, and later for repairing holes and ruts and for maintaining a suitable inward slope. A covering of 3 inches is ample for a beginning. Six hundred tons of rock dressing will completely cover a full mile of single-track road, and on the average mountain road that amount would be sufficient for 2 miles.

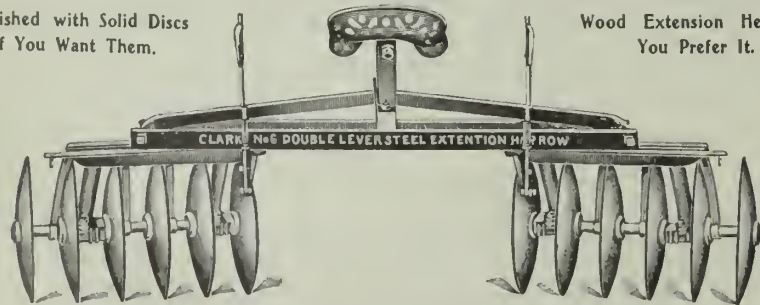
If a road surface is to wear evenly, it should be homogenous—that is, it should not be built or repaired in spots with different kinds of materials; a clay road should not be patched with gravel nor a gravel road with clay. Whenever holes or ruts occur these depressions should be filled with material of the same kind as constitutes the road surface. Detritus, resulting from traffic, which is washed by rains into the gutters, should not be placed back upon the surface, for it has lost its power of cementation; it should be thrown away and replaced by fresh material. No perishable material of any description, under ordinary circumstances, should be permitted upon the roadbed, sod being particularly objectionable.

## THE POULTRY YARD.

### A San Benito Poultry Farm.

The poultry farm of Mr. R. E. Bryant is located upon a five-acre tract southwest of Hollister and is described by the Advance. One acre of this is planted to alfalfa, which is cut and fed to the poultry daily. A flock of 1100 hens is maintained, divided into six different pens. The houses are large and roomy, the sides hung on hinges. Each morning these sides are raised full height so that the sun and wind can thoroughly ventilate, fumigate and dry the houses. At night the sides are closed down, furnishing warmth to the feathered inhabitants. By this method of ventilation the floors are always dry and the roosts free from vermin. City water is piped to each pen, Mr. Bryant having found that pure water is one of the prime requisites of success in the poultry business. The hens are supplied with an abundance of gravel and shells. The labor of caring for the poultry, shipping eggs, etc., takes about one-half of the owner's time. In conjunction with a neighbor, Mr. Bryant has patented an egg food that has proven highly successful. All the buildings on the place are whitewashed thoroughly several times a year. Illustrating the profits of the business, we have before us the returns for the month of December, 1901. From the 1st to the 27th the cash receipts were exactly \$208.95, after paying freight and commission. The expenses were, water \$2.50, feed \$50, leaving the owner \$156.35 for his labor for the month. The average expense for feed the year around is slightly under \$50 per month.

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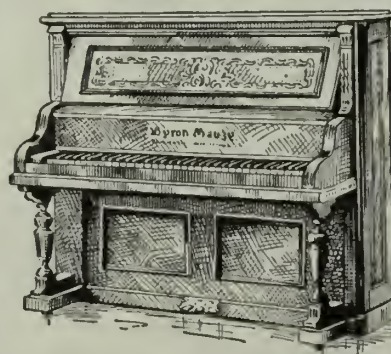
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## GRAND DISPOSAL SALE OF STANDARD Trotting Brood Mares (ALL IN FOAL)

FROM THE CELEBRATED **PALO ALTO STOCK FARM,**  
On THURSDAY, January 30, 1902, at 11 a. m.

FOLLOWING IS THE LIST TO BE SOLD AT THIS AUCTION:

Color & Sex	Foaled	NAME.	SIRE.	DAM.	Stallion Bred to in 1901.
ch. m.	1885	Anselma 2:39½	Ansel 2:20	Elaine 2:20	Monbells 2:23½
b. m.	1896	Asombrosa	Azmoor 2:20½	Ahwaga	Mendocino 2:19½
br. m.	1840	Bell Bird 2:22	Electioneer	Beautiful Bells 2:29½	Iran Alto 2:12½
b. m.	1898	Cecino	Mendocino 2:19½	Cecil	Exioneer
b. m.	1887	Clarion 2:25½	Ansel 2:20	Consolation	Mendocino 2:19½
br. m.	1896	Clarionette	Dexter Prince	Clarion 2:25½	Mendocino 2:19½
b. m.	1897	Coralia	Hoodle 2:12½	Coral 2:18½	Monbells 2:23½
b. m.	1892	Corsica	Dexter Prince	by Corsican	Exioneer
b. m.	1884	Ella 2:29	Electioneer	Lady Ellen 2:29½	Nutwood Wilkes 2:16½
ch. m.	1882	Elsie	General Benton	Elaine 2:20	McKinney 2:11½
bl. m.	1895	Glacinta	Guy Wilkes 2:15½	Sproule	Azmoor 2:20½
b. m.	1884	Lady Agnes	Electioneer	Lady Lowell	Exioneer
b. m.	1880	Lady Nutwood 2:34½	Nutwood 2:18½	Lady Mac	Mendocino 2:19½
bl. m.	1888	Ladywell 2:16½	Electioneer	Lady Lowell	Monbells 2:23½
ch. m.	1883	Laura Drew	Arthurton	Molly Drew 2:27	Mendocino 2:19½
ch. m.	1887	Lena	Dexter Prince	Lena R.	Mendocino 2:19½
bl. m.	1888	Lilly Thorn	Electioneer	Lady Thorn Jr.	Exioneer
b. m.	1881	Morning Glory	Electioneer	Marti	Exioneer
b. m.	1893	Nellie Benton 2:30	General Benton	Norma	Monbells 2:23½
b. m.	1893	Ororose	Ora Wilkes 2:11	Melrose	Mendocino 2:19½
bl. m.	1892	Sabbling	Guy Wilkes 2:15½	Sable	Iran Alto 2:12½
gr. m.	1885	Sonoma 2:28	Electioneer	Sontag Mohawk	Exioneer
ch. m.	1894	Sylla Barnes	Whips 2:27½	Barnes	Monbells 2:23½
b. m.	1887	Wildmay 2:30	Electioneer	May	Nazote 2:28½
bl. m.	1897	Zorilla	Dexter Prince	Lilly Thorn	Exioneer

Color & Sex	Foaled	NAME.	SIRE.	DAM.
b. s.	1882	Azmoor 2:20½	Electioneer	Mamie C
br. g.	1898	Altower	Altivo 2:18½	Wildflower (2) 2:21
ch. g.	1899	Menzie	Mendocino 2:19½	Lizzie

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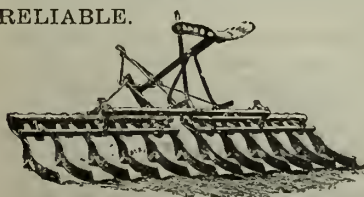
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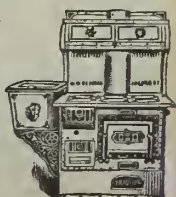
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## THE HOME CIRCLE.

## Be Jolly.

What's the use of looking sad?  
What's the use of getting mad?  
Life's too short to spend in strife—  
Beating brother, scolding wife.  
Be jolly!

What's the use to pout and frown?  
Why turn good things upside down?  
Death is sure to come some day,  
Why not laugh, then, while we may?  
Be jolly!

Why go grunting 'round like swine?  
Why your dearest friends malign?  
You were made to be a god—  
Lift the fallen from the sod.  
Be jolly!

Why cause other folks to grieve?  
Why cast-down, oppress, deceive?  
Take your brethren by the hand,  
Lift them up until they stand.  
Be jolly!

Don't traduce your neighbor's name—  
Don't on other's heap your blame—  
Love is better far than hate—  
Better than thank than reprobate.  
Be jolly!

Life is sweet if not abused.  
All are good if not misused.  
God is gracious unto all—  
Live as though you heard Him call.  
Be jolly!

—B. F. Sliter.

## A Successful Wizard.

"Good-by, old fellow. I wish you were going with me!" cried Herbert Brown, a tall sun-browned young man of 20, as he sprang upon the step of the train, which was already in motion. "Good-by and God bless you, Herbert!" answered his brother Henry. I wish I could go, but I cannot. Some one must stay with father, and it might as well be me."

And he sighed as the train moved away faster and faster until hid from view.

When the diamond fields of Africa sent their glittering, glowing challenge to the whole civilized world, and fired so many thither—a few to independence, the majority to poverty, despair and death—the brothers were anxious to go; but both could not. Neither would take mean advantage of the other, so it happened that when they drew lots to see which would go, that happy lot fell to Herbert.

Henry was to stay at home, mind the farm, care for their aged parents and receive half of whatever should result from his brother's labors.

With a sad, thoughtful countenance Henry retraced his steps to the old farmhouse, and returned to the humdrum life of the farm.

Days came and went, and at last he married and brought his bride to the homestead.

The good old farmer died, and was soon followed to the quiet graveyard by his faithful wife, to whom the sorrow of parting had been softened by the blessed hope of soon joining him in that land where parting was unknown.

Letters from the far-off diamond fields had told of brilliant success as the days wore on—a success even greater than sanguine Herbert had dared to dream of—and at last came a welcome letter:

"I have enough, Henry. I am coming home to share it with you. Home! How pleasant that sounds to one so long exiled from its shelter! You can look for me by the next steamer."

One month later Herbert Brown, a trifle older, a trifle more browned by exposure to a tropic sun, but more manly and self-reliant, stepped from the train in his native village and was warmly greeted by his brother.

"Why, Henry, my man, what ails you? I never would have known you. What ails you, I say? You look more like 60 than 30 years of age!"

"Nothing is the trouble with me, Herbert; or at least—. But come, I might as well tell you first as last. The carriage is waiting—come!"

With a perplexed and anxious look, the returned brother took a seat, and they were soon rolling easily along the road toward the old homestead.

Fully half the distance was passed in

silence, then Herbert said, laying his hand affectionately on his brother's arm:

"Henry, my man, tell me what it is that troubles you. It cannot be money matters. I have enough money for us both, and half is yours by our contract. What is it? Henry, tell me. Your family is well?"

"Quite well, Herbert."

"Any domestic trouble? Is my sister-in-law a shrew?"

"No."

"Well, what is it then? One would think by your face it was something awful. Out with it, man! Don't be downhearted. Perhaps I can help you."

"Nobody can ever help me," answered Henry, with a gesture of despair. "But I may as well tell you before we reach the house. My wife is dumb!"

"Dumb?" echoed Herbert. "I thought I knew her. You wrote me that you married Ellie Phillips."

"And so I did."

"Well, as I remember her, she was the sauciest, merriest witch in creation. So far as being dumb, she had rather too much to say for a fellow's comfort, sometimes."

"So she was," responded Henry, "and so she continued for the first two years of our marriage; but she is sadly changed," with a heavy sigh. "We have three children, and not one of them has ever heard their mother speak."

"But why, Henry? There surely must be a reason."

"Listen! In the second year of our marriage Lena Warren came back to the village. I met her accidentally several times, but Nabby Grimes—that inveterate old gossip—convinced Ella in some way that my fondness for my old flame had returned."

"One day, as I was coming back from the village, I overtook Lena by the bridge at the foot of the hill. The poor girl was in trouble over some misconduct of that rascally brother of hers, and we stopped on the bridge to talk it over. I had no thought of anything wrong; but Nabby Grimes' house is in sight of the stream. She saw us, and went to Ella with the news."

"When I reached home they were sitting at the door, old Nabby flushed and triumphant, my wife pale and disturbed."

"Tea ready?" I asked. "I'm as hungry as a bear."

"No answer."

"It is quite a walk from the village," I continued, as I seated myself and removed my hat.

"I should not think you would find it long with such pleasant company!"

"It was Ella that spoke, and the cold sarcasm of her voice made me look up in surprise."

"Oh, you needn't put on that sanctimonious air!" she sneered. "I know all about it; how you met her at the bridge and stood with your arm about her. And you kissed her, sir—kissed her!"

"That is false!" I shouted—"as false as the black heart of your informant!"

"Nabby bristled at that, and prepared to go."

"Yes, go!" I cried; "and never darken my doors again. I'm sure my ill luck will go with you, you old beldame—"

"She never answered a word, but stalked away down the hill, and has not darkened my door since."

"So much good came of it."

"After she was out of hearing I turned again to Ella, who sat defiantly still."

"And as for you, madam, if you cannot make better use of your tongue than to abuse a husband who has always been true to you, you had better never speak again."

"Heaven knows I was mad, Herbert, or I never would have said that. She took me at my word, and has never spoken a word to any one since. That is all."

And Henry Brown sighed as he gazed at the home they were rapidly approaching.

"And is she the same in all other respects?"

"Yes—except that she is silent. No

house is so neat and attractive as ours; the children are always neatly and cleanly clad, and the table spread with all I could desire."

"Strange!" muttered Herbert; then, as a sudden thought flashed through his mind he added: "I think I see a way; I am not sure, but I think it may succeed. If we can get her to utter one word, the spell will be broken. All then will be well."

"How will that be done?" asked Henry, in surprise.

"Trust me, my man. Do not be surprised at anything you may see. Do not fear for Ella; she shall not be harmed. Will you trust me?"

"Fully and freely, and God grant that you may succeed. Here we are now."

Ella greeted Herbert warmly, but with evident embarrassment.

"And so this is my sister-in-law," said he, as he grasped her hand. "And I am so pleased to get home again! You do not know how glad I am! And I may stay with you awhile, may I not?"

A bright little nod was his only answer.

"This is home! How the village has grown! Not much like it was when we used to go to school in the little brown schoolhouse under the hill. Do you remember those days, Ella?"

Another nod, accompanied by a bright blush and merry smile.

In the long bygone days it was Herbert who was Ellie Phillips' boy cavalier, not his brother.

Tea was announced by the smart maid, and they repaired to the dining-room, where Herbert kept up a steady conversation, answered in monosyllables by his brother, in nods and signs by Ella.

In vain he tried to make her break the silence that bound her.

A bright smile or a decisive shake of the head was all she vouchsafed to his questioning.

When they were again seated by the cozy fire in the sitting-room, and Henry had gone to look after outdoor matters, Herbert remarked:

"How Henry has changed, to be sure!" and he was gratified at the sad expression on his sister-in-law's face. "I should hardly have known him. Dear fellow, how glad I was to see him. Did he ever tell you how I came to go and he to stay at home? No! Well, we both wanted to go; but he, like the noble fellow that he is, stayed at the old farm, and I selfishly took advantage of his generosity and went. Not many men would have done that, Ellie."

A loving look softened the frown eyes of his brother's wife, and a tender smile trembled about the silent mouth. "He has prospered here, too, better than I could have done."

This time there was no mistaking the proud light that shone from the brown eyes, and all further conversation was stopped by the entrance of Henry.

"Aha!" thought Herbert, as he covertly watched her interest while talking over old times and new with his brother. "Aha! I think my plan may succeed. If I mistake not, she showed sorrow, love and pride as I talked of Henry. Very good signs—very good, indeed!"

"Ella, can you give Herbert his old chamber—the best chamber? It will seem more like home to him. We have always kept it just as you left it, my boy."

"Not any bed for me to-night, Henry," said Herbert, slowly, with a far-away look in his eyes as he gazed across the valley to a hill about two miles distant. "I have important business to perform before daylight. I must be at Rattlesnake cave at midnight."

The husband and wife surveyed him with startled, inquisitive glances.

"Why not go by daylight if you must go?" cried Henry. "It is very dangerous there."

"I know it," answered Herbert, coolly, "and for that reason I must go there at midnight. You did not know I was something of a wizard? Of course not! I learned of an old native in Africa. One charm I have missed in

my wanderings. I am determined to find it now. It will benefit you even more than me."

"Let me at least go with you?" said Henry.

"Not so fast. I must go alone, or all is lost. If I return"—he paused and looked attentively at Ella—"if I return I am confident that I shall succeed. Your hand, please."

And he carefully studied the rosy palm she extended to him.

"I thought so. These lines diverge. My charm will bring them together. Ah, it is already sundown. Good-by! At sunrise I will be with you, never fear."

And, unheeding his brother's detaining voice, he walked rapidly away down the hill and was soon lost to their view in the gathering darkness of the valley.

As soon as he was out of sight, however, he made a detour, and, entering the old orchard behind the barn, soon gained its friendly shelter, and, climbing up on the fragrant mow, threw himself on the soft, yielding hay and, wrapping his coat closely around him, was soon fast asleep.

How often had he tried that same trick when a boy at home! How the years rolled back as by magic, and he was young and care-free again! He awoke at the first gray streaks of day, and, carefully picking his way along the remembered path, came slowly up the hill to the front door, in the golden rays of the rising sun.

"Here you are!" cried Henry, flinging open the door. "How anxious I have been about you, to be sure!"

"I told you I would be back at sunrise," laughed Herbert, as he nodded to his sister-in-law.

"And did you get what you sought?"

"That remains to be seen," answered Herbert, solemnly. "Please leave me alone with Ella for a few moments! Now let me see your hand again, please. The lines are nearer; it needs but one word to bring them together," and he gazed fixedly at her hand, unheeding her startled, questioning glance. "You must answer me one word. You must solemnly swear that you now and forever hate Henry Brown, your husband; that you never loved him—"

"No!" almost shrieked Ella, snatching her hand from his grasp and bursting into a passion of tears. Words are powerless to describe the scene that followed.

Poor Henry, who, despite his firm trust in his brother, had been listening at the door, burst it open and clasped his sobbing wife close in his arms, while Herbert coolly lighted a cigar and strolled away to the veranda, leaving them free to "make up."

It was as he had predicted. That one word, so energetically uttered, broke the spell that bound her to silence.

And he knew when he met them, half an hour later, at the breakfast table, by their radiant, joyous faces, that the cloud had passed from their domestic sky at last.

"And what was the charm you sought on Rattlesnake hill?" asked Henry.

"A woman's tongue," laughed his brother; "and I think it was more for your sake than my own."

"And did you really go there?" asked his sister-in-law.

"No!" answered Herbert, as emphatically as she had done a short time ago. "No, Ella; I passed a very comfortable night on the haymow in the old barn."

"You deceitful boy," she laughed, while happy tears dimmed her brown eyes. "I suppose I ought to scold you, but I cannot."

"God bless you!" said Henry. "This is better than diamonds."

"What beautiful teeth Miss Smith has."

"Yes, but they're false."

"False? Why do you think so?"

"She told me that she inherited them from her mother."—Boston Herald.

"No, I CANNOT MARRY YOU," said the beautiful maiden. "Of course not," responded the cheerful youth, "we'll let the minister do that."—Philadelphia Record.



## Pa's Awful Ignorance.

Most every day when I'm at school  
The teacher tells us things  
About the birds and animals  
And presidents and kings,  
And then, at night, when I ast pa,  
If what she says is so,  
He reads his paper right along  
And says: "Oh, I dunno!"

One day she told us that the world  
Is round, just like a ball,  
And that there's nothing down below  
It's standin' on at all.  
I ast pa if she told the truth,  
He read his paper, though,  
And put his feet up on a chair,  
And said: "Oh, I dunno!"

And once the teacher said the sky  
Ain't heaven's floor, and tried  
To make us think no angels walk  
Along the other side,  
And so that night I ast my pa,  
And all he said was: "Oh,  
Don't bother me about such things,  
I'm busy—I dunno!"

One time a bigger boy he said  
The doctor didn't bring  
My little baby sister in  
A box—no such thing!  
That night I ast my pa if what  
That big boy said was so.  
And pa he answered: "Oh, keep still—  
Confound it, I dunno!"

I used to kind of think somehow  
That my pa knew a lot—  
But that was wrong, or if he did  
I guess that he's forgot.  
Since I've got started into school,  
Most every day or so  
I hear about a hundred things  
Pa doesn't seem to know.

—Chicago Record-Herald.

## Breaking It Gently.

"What do you want, little boy?"  
"Is this where Mr. Upjohn lives,  
ma'am?"  
"Yes."

"The Mr. Upjohn that runs the  
bank?"

"He is an officer in a bank."

"The Mr. Upjohn that went down  
town on a trolley car this morning?"

"I presume he went on a trolley car.  
What—"

"Is he the Mr. Upjohn that was in  
that hor'ble street-car accident?"

"I haven't heard of his being in any  
street-car accident."

"Didn't hear 'at he'd sprained his  
ankle jumpin' out o' the car when the  
train run into it?"

"No. Little boy, you frighten me.  
What has—"

"Didn't hear how he run to a drug  
store fur a piece o' court plaster to  
stick on a little cut he'd got over one  
eye?"

"Not at all. For mercy's sake—"

"He isn't in, is he, ma'am?"

"No, he's—"

"Name's John U. Upjohn, isn't it?"

"Yes, that is his name."

"Then he's the same man. He won't  
be here for an hour or two, I guess,  
'cause he's stoppin' to have one of his  
teeth tightened that got knocked a  
little bit loose when he was jumpin' out  
o' danger, y' know."

"Little boy, tell me the whole story.  
I think I can bear it now."

"Well, ma'am, he's in the hosspittle  
with four ribs broke, an one leg's in a  
sling, an' his nose is knocked kind o'  
sideways, but he's gittin' along all  
right, an' he'll be out again in about a  
month, an' here's a letter f'm the  
doctor, tellin' ye all about it, ma'am."  
Epworth Herald.

## How to Sweep an Invalid's Room.

We all know how untidy a sick room  
becomes, and how annoying the dust of  
the sweeping is to the patient. "To  
remedy this," said a trained and ca-  
pable nurse recently, "I put a little  
ammonia in a pail of warm water, and  
with my mop wrung dry as possible go  
all over the carpet first. This takes  
up all the dust and much of the loose  
dirt. A broom will take what is too  
large to adhere to the mop and raise  
no dust. With my dust cloth well  
sprinkled I go over the furniture and  
the room is fairly clean."—United  
States Health Reports.

## Pate De Foie Gras.

In speaking about the agitation to  
remove pate de foie gras (goose liver  
pie) from the menu of the Guildhall  
banquet to the Prince and Princess of  
Wales, the London News says of the  
dish: Pate de foie gras is, of course,  
a product of nineteenth century lux-  
uriousness, for the Roman emperors,  
with their peacocks' brains and larks'  
tongues, never dreamed of the delicacy  
which now forms the staple industry of  
Strassburg. Its present popularity is  
due almost entirely to the rage for it  
which sprang up in Parisian society  
during the Second Empire. The aris-  
tocracy of France having launched the  
article into favor, the British gour-  
mand, never slow to follow in the steps  
of Paris, speedily adopted the idea, and  
from that time to the present the de-  
mand has steadily increased in every  
country. Some idea of the extent of  
the trade may be gathered from the  
fact that twenty years ago the value of  
the "fat liver pies" sent out from  
Strassburg amounted to \$500,000 an-  
nually, while at the present moment it  
is estimated to reach \$750,000. It  
seems at first sight incredible that an  
article of limited consumption should  
represent such a large figure; yet such  
is the fact. St. Martin's day may be  
said to mark the commencement of the  
pate season proper, for, although the  
Strassburg dealers in "delicatessen-  
waren" always keep a stock on hand  
labeled "this season's goods," with  
which to supply the requirements of  
tourists, all pate obtained before No-  
vember may be assumed to be of in-  
ferior quality. Early in the summer the  
peasants and small farmers of Alsace  
and Lorraine begin the feeding of geese  
for the great Strassburg market.  
Nearly every cottage represents a  
goose liver factory, some villages being  
famed for the superiority of their pro-  
duce. Thus Wangenau possesses such  
a reputation that its geese command a  
higher price than birds fed in neigh-  
boring places. A visit to the room where  
the birds are being fed during the  
three months required to bring them to  
the needful condition of corpulency is  
calculated to excite a degree of repul-  
sion which would probably be shared  
even by the lovers of pate de foie gras.  
Each bird is confined within a box,  
with such limited accommodation that,  
while the goose is able to move its head,  
no other form of exercise is possible.

Under these circumstances all that is  
necessary to set up liver complaint is  
to feed the birds frequently and upon a  
heavy diet, which is done by forcing  
down their gullets a stiff mixture of  
maize meal spiced with condiment. A  
week or two of this generous feeding is  
quite sufficient to originate disease;  
the liver steadily distends, until the un-  
fortunate bird becomes little more than  
a mass of liver and fat. When, in fact,  
the goose has become sufficiently dis-  
eased it is ready for market; and the  
more advanced the disorder the more  
valuable the bird. In estimating the  
value of a goose liver, however, regard  
is had to more consideration than  
weight and size. Some livers are red,  
others are dark brown, while in some  
cases they assume a green hue, and, as  
these are most highly esteemed by epi-  
cures, a fine liver will fetch as much as  
\$6. Inferior kinds, however, are worth  
only from 75 cents to \$1.25 per pound.  
On Wednesday mornings the shops of  
the dealers are crowded by farmers  
from the country districts laden with  
small baskets containing one or two  
goose livers. One of the most curious  
sights in Strassburg during the winter  
months is the arrival of the vendors of  
liver at the railway station, each with  
her—for they are mostly farmers' wives  
of the shrewd Alsatian type—load of  
material for the dinner tables of the  
"upper ten thousand" throughout the  
world.

Besides the actual preparation of the  
paste—which is a secret carefully  
guarded by the leading firms—the man-  
ufacture of the cases in which it is sent  
out for sale represents a considerable  
industry. The tastefulness and variety  
of designs upon the outside of these  
cases are marvelous. Most of them  
bear the unmistakable cachet of Paris-

ian origin; for, pate de foie gras being  
an article restricted by its cost to the  
best tables, it is held (presumably  
upon the principle "who drives fat  
oxen should himself be fat") that for  
such a dainty nothing less than a costly  
casket will suffice. Accordingly Strass-  
burg firms vie with one another in the  
artistic attractiveness of the jars in  
which their wares are sent out. Prob-  
ably the alarm of the dealers is a little  
premature. Consumers of pate de foie  
gras who have not been deterred from  
eating it by the knowledge that it is  
the product of disease will not, it may  
be supposed, permit humanitarian con-  
sideration to come between their pal-  
ates and their luxuries.

## Saving His Eyes.

To save one, perhaps both eyes, when  
he was injured, a physician, it is said,  
voluntarily shut himself in a room  
made totally dark for nine months.  
The fortitude which enabled him to  
adopt this course, and the ingenuity by  
which he preserved his health and  
faculties in this, the most mentally and  
physically depressing of all forms of  
imprisonment, are sufficiently remark-  
able; but he also kept an accurate re-  
cord of his impressions when he at  
last looked again upon the light, after  
the supreme moment at which he sat-  
isfied himself that he was not blind, but  
could see.

He found that in nine months' dark-  
ness his eyes had lost all sense of color.  
The world was black, white and gray.  
They had lost the sense of distance.  
His brain interpreted the picture  
wrongly. His hand did not touch the  
object meant to be grasped. Practice  
soon remedied the last induced defect of  
sight. Experiments with skeins of  
various colored wool, in the presence of  
one who had normal color-vision, re-  
stored this sense.—Popular Science.

## DOMESTIC ECONOMY.

## Hints to Housekeepers.

Table salt applied with a wet cloth  
will remove egg stains from silver.

Camphor gum placed in cloth presses  
and drawers will keep mice away, as  
the odor is very disagreeable to them.

Cake should be filled with whipped  
cream at the very last moment, or the  
cream will soften the cake and make it  
soggy.

Persons whose hands easily become  
chapped should thoroughly rinse the  
hands with fresh water after they have  
been washed with soap, being careful  
to wipe them perfectly dry.

It is worth while to know that wagon  
or bicycle grease, tar or pitch can be  
removed if lard is rubbed on the spots,  
immediately, and afterward it is washed  
as usual.

Rats and mice can be driven away by  
putting potash into their holes or where  
they are likely to go. The air will  
make it soft and sticky, and they dis-  
like it very much.

Iron rust can generally be removed  
if lemon juice and salt is applied, and  
the garment laid in the sun for several  
hours. Repeat the operation if the  
first trial is not successful.

Grass stains on children's clothes  
often cause a great deal of annoyance.  
If molasses is rubbed on these spots,  
and the garment is afterwards washed  
as usual, they will usually disappear.

To save wear and to insure that they  
dry in shape, hang table and bed linen  
across the line to dry with the ends  
down. The warp threads, which are  
the stronger, will thus take the strains.

Combs should be washed as seldom as  
possible, as water makes the teeth  
split, and renders the fabrics of which  
they are made rough. Small brushes  
manufactured for cleaning combs may  
be procured, and with one of these the  
combs should be well brushed, and af-  
terwards wiped with a cloth.

A delicious salad course recently  
served at a luncheon was a salad of  
mushrooms and celery covered with  
mayonnaise, served in red and green  
pepper shells resting in the curled

white leaves of head lettuce. A relish  
prized by those who have copied the  
idea from foreigners is slices of green  
peppers, the seeds removed, eaten with  
white bread as an appetizer.

Housekeepers are very much annoyed  
by scorched spots on table linen or  
articles of clothing, sometimes. A  
paste can be made which will remove  
them entirely. To make this paste,  
use half an ounce of white castile soap,  
finely shaved, two ounces of earth se-  
cured at the druggist's, the juice of  
two peeled onions and one cupful of  
vinegar; stir well and let it boil  
thoroughly. Cool before spreading over  
the scorched spot, and let it remain un-  
til dry then wash out and the places  
will have disappeared.

## Domestic Hints.

APPLE SNOW.—Peel and grate one  
large apple, sprinkling over it as you  
grate one small cup powdered sugar to  
keep from turning dark. Break into  
this the whites of two eggs and beat in  
a large bowl constantly for half an hour.  
Heap in a glass dish and pour over it a  
fine, smooth custard.

STEWED KIDNEY.—After removing  
all fatty, veiny parts, rub the kidney  
with salt, and let it stand over night.  
In the morning drain and boil in three  
parts fresh water and one tablespoonful  
of vinegar. Stew till tender, take out,  
and cut into small squares. Mix two  
tablespoonfuls of flour in cold water,  
stir into the gravy, season with pepper  
and salt. Return the kidney and boil  
five minutes together. Serve very hot.  
If desired, a small onion may be sliced  
and cooked with kidney first.

POTATO CROQUETTES.—Enough potato  
croquettes for five persons can be made  
as follows: Ten medium-sized potatoes,  
yolks of three eggs and whites of two,  
one tablespoonful of butter, seasoned  
breadcrumbs. Cut a ring around each  
potato and cook in salted water until  
soft. Dry and remove the peel, with-  
out waiting for them to cool. Mash  
and rub in the three yolks of egg and  
butter. Form into croquettes and roll  
in the slightly beaten whites of eggs,  
then roll in seasoned breadcrumbs and  
fry until brown.

BROWN BREAD PUDDING.—Put in a  
bowl the yolks of four eggs and three  
whole eggs, and six and a half ounces of  
sugar; beat together for fifteen min-  
utes, then add six and a half ounces of  
almonds blanched and chopped fine, a  
dash of cinnamon, a tablespoonful of  
chocolate and four tablespoonfuls of  
citron cut very fine; then add eight  
ounces and a half of brown bread grated  
and soaked in a few spoonfuls of claret  
or milk. Butter a mould, sprinkle with  
bread crumbs, pour the pudding into it,  
and set it in a pan of hot water in a  
moderate oven. Bake three-quarters  
of an hour and serve with a sauce.

## Bacon Rightly Broiled.

Broiled bacon is a dish which in few  
households deserves the adjective, be-  
cause it is seldom broiled; the fat is  
fried out of it and again soaked into it  
by long spluttering in a spider full of  
grease. The only way to cook bacon—  
both for the matter of appearance and  
for digestive qualities—is to broil it,  
not over a bed of coals (it is too fat for  
that), but in a very hot oven. Cut the  
bacon in the most delicately thin slices  
possible, rejecting the rind. Lay the  
pieces close together in a fine wire  
broiler. Place it over a dripping pan  
and set it in a hot oven. It requires to  
be turned just once. The fat which  
falls into the pan makes excellent drip-  
pings for frying potatoes. Drain the  
bacon on brown paper. If you wish to  
serve calf's liver with this, sprinkle the  
liver with pepper and salt, roll it in  
flour and fry brown in the bacon drip-  
pings. Serve with a curled morsel of  
bacon on top of each piece of liver.  
Bacon as served by the average cook,  
well soaked in grease, is the most in-  
digestible of food; when broiled crisp  
in the oven it is a dish that may be  
served even for a child of two years  
with impunity. Among all the fats,  
delicately crisped bacon ranks next to  
cream in ease of digestion.



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## THE DAIRY.

### The Grout Bill Must Stand.

There has arisen, unfortunately, it would seem, a difference of opinion among those who are pushing anti-oleomargarine legislation at Washington. We stated in our issue of Dec. 21 that a new bill called the Tawney-Grout bill was to be pushed by the organized dairy interest in the place of the Grout bill. This does not seem to be the fact, for those who pushed the Grout bill so far toward success before are still standing for it. We have just received copious documentary evidence on this point, including the following letter from the author of the Grout bill, which compares the features of the two proposed enactments. We quote from this letter as follows:

Any change of front in the face of the enemy is always a dangerous experiment. We are literally in the face of an enemy, whom we have thus far been unable to handle. The proposed change of position would present to him a wavering vacillating front. No one can fail to see that this would weaken us and give room for courage on his part. Of course, if the change will make a better law, that is full answer to all this class of objections. Let us see if it will.

The bill of last session reduced the tax on uncolored oleomargarine from 2 cents to  $\frac{1}{2}$  cent per pound. The Tawney bill takes the tax off the uncolored article altogether. The objection to this is that with no tax on the uncolored oleomargarine the revenue derived from licenses under the law would be insufficient to pay the expenses of administering it; and no one will pretend that this dirty fraud ought not to be kept under contribution in a sum surely sufficient for that purpose. There ought to be no mistake about this. The sum better be considerably too large than a little too small.

Of course, it cannot now be exactly determined what the revenue from the uncolored product would be. But the drafter of the bill of last year felt that there would be no mistake in providing sufficient revenue from the act itself to cover the cost of holding down this fraud; that under no circumstances should it be a charge on the treasury. In short, that it would not be fair to tax the dairymen for the purpose of paying the cost of enforcing the law that protects him from dishonest competition; not fair to tax the general public for the enforcement of a law protecting it from a fraudulent food product, especially when we have in our hands the machinery for making that fraudulent food product itself pay the cost.

But some one may say that the uncolored article is not fraudulent. That answer is not sufficient. While it is true that the uncolored article in itself is not fraudulent, it is also true that unless constantly watched at great cost the dress of butter will be given it, so that it may go out and palm itself off on an unsuspecting public as butter, and at the price of butter. It is so liable to become fraudulent, the temptation being so great for it to do so, that the only safety lies in keeping it under constant surveillance, and that too at constant cost. And speaking for myself, I say let this article—I mean uncolored oleomargarine, which our friends say is not fraudulent, but which cannot be trusted out of sight—itself pay the cost of the inspector who must constantly stand over it to keep it from being fraudulent. I do not believe that less than  $\frac{1}{2}$  cent per pound will do this. But if it should a little more than do it, who will say that this little would be an unjust burden? What think you

the dairymen of the country would say on this point? What, in short, the whole public, whose sense of fairness can always be relied on?

The proposed change from last year's bill, as you will see, is really a proposition favorable to oleomargarine. It would be a gratuitous concession to the expense of an honest industry and of honest consumers. It is full of mischief and should be prevented.

I believe, when those who propose this change in the bill of last Congress come to think it all over, they will conclude that after all the bill passed by the house in the fifty-sixth Congress is best.

WILLIAM W. GROUT.

St. Johnsbury, East, Vermont.

### A Good Cow and a Good Paper.

TO THE EDITOR:—Reading an article in the PACIFIC RURAL PRESS telling how much butter an average cow produced, inspired me to sum up my accounts and see what kind of a showing they would make. From October, 1900, to October, 1901, I made 400 pounds of butter, sold 278 quarts of milk and sixty-seven prints of cottage cheese, in which a great deal of cream was used. The cow has been giving milk twenty months and I am selling a quart of milk a day and making over ten pounds of butter a week. She is a grade Holstein.

We have taken your paper since coming to California two years ago and could not keep house without it. Whenever we have been perplexed about anything, your next paper was sure to have an article on the subject, which we have always found helpful. We always recommend it to all the new comers we come in contact with.

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Instructor.

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Prof. Dairy Husbandry.

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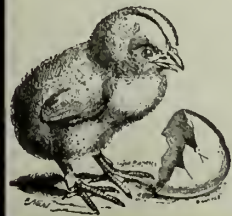
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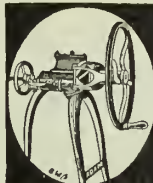


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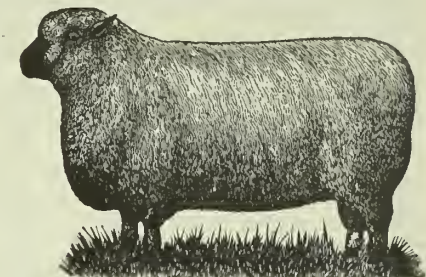
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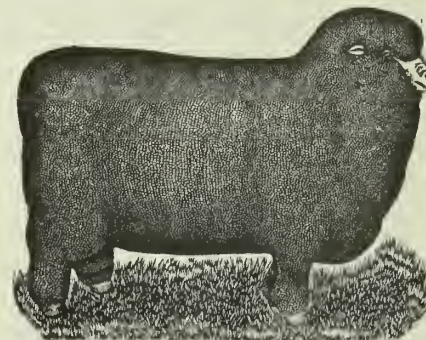


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**MARQUIS.** REGISTERED NO. 9017. Weight 1750; bred by J. D. Patterson Oxnard, Cal.; foaled March 25, 1895. Sire, imp. Montebelle 3298 by Caesar; dam, imp. Maria I 2450 by Hercules.

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# S. F. Market Report.

## Produce Market.

SAN FRANCISCO, Jan. 15, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday.....	83 3/4 @ 84 1/4	82 3/4 @ 83 1/4
Thursday.....	84 1/4 @ 83 3/4	84 @ 83 1/4
Friday.....	83 @ 83 3/4	82 3/4 @ 83 1/4
Saturday.....	83 3/4 @ 82 3/4	83 3/4 @ 82 1/4
Monday.....	82 3/4 @ 81 1/4	82 3/4 @ 81 1/4
Tuesday.....	80 @ 81 1/4	79 3/4 @ 81

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday.....	46 1/4 @ 47	40 3/4 @ 41 3/4
Thursday.....	47 1/4 @ 46 3/4	42 3/4 @ 41 3/4
Friday.....	45 3/4 @ 46 1/4	40 3/4 @ 41 3/4
Saturday.....	46 1/4 @ 45 3/4	41 3/4 @ 40 3/4
Monday.....	46 1/4 @ 45 3/4	41 3/4 @ 40 3/4
Tuesday.....	46 1/4 @ 41 1/4	40 3/4 @ 39 3/4

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 10 3/4 @ 1 10 1/4	1 11 3/4 @ 1 12
Friday.....	1 11 1/4 @ 1 10 3/4	1 11 3/4 @ 1 11 1/4
Saturday.....	1 10 3/4 @ 1 11 1/4	1 12 @ 1 12 1/4
Monday.....	1 11 1/4 @ 1 10 3/4	@
Tuesday.....	1 09 3/4 @ 1 10 1/4	1 11 @ 1 11 1/4
Wednesday.....	1 09 3/4 @ 1 10	1 10 3/4 @

## WHEAT.

The market in this center has tended against the buying interest most of the week under review, but there was no marked improvement in the bids of either shippers or millers, and at the full current figures generally exacted purchases were in the main confined to most immediate needs. Offerings were not heavy, however, from any quarter. Many holders are unwilling to sell at prices now obtainable, believing that better values will be established before the close of the season. The belief is certainly well founded, although it is wholly impossible to clearly outline the future. Ocean freight rates are lower, with prospects of further declines. A charter was effected this week at 28s. 9d. At 25 shillings, or 10 shillings per ton under the recent market, ship owners would be still doing fully as well as the average California farmer with wheat at \$1.25 per cental. With ocean freights at 25 shillings, and no decline in wheat values abroad, shippers could pay \$1.25 for wheat. Some holders have placed their limit at \$1.15, and while they cannot now realize this figure, their ideas of prospective values are certainly not unreasonable. To secure select milling wheat at this date in anything like wholesale quantity \$1.15 or better would very likely have to be paid. The United States visible supply east of the Rockies was reported at 58,077,000 bushels, indicating a decrease for the week of 852,000 bushels.

California Milling.....	1 08 3/4 @ 1 12 3/4
Cal. No. 1 shipping, alongside.....	1 06 3/4 @ 1 07 1/2
Oregon Valley.....	1 06 1/4 @ 1 08 3/4
Washington Blue Stem.....	1 07 1/4 @ 1 12 3/4
Washington Club.....	1 05 @ 1 07 1/2
Off qualities wheat.....	1 00 @ 1 05

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	65 5/8 @ 65 1/4 d	s-d @ s-d
Freight rates.....	38 3/4 @ 40s	28 3/4 @ s
Local market.....	98 3/4 @ 1 01 1/4	1 03 1/4 @ 1 08 3/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.11 1/4 @ 1.09 1/2.
December, 1902, delivery, \$1.12 1/2 @ 1.10 1/2.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.10 1/4 @—; May, 1902, \$1.09 1/4 @ 1.10.

## FLOUR.

The advanced figures last quoted continue in force, with market moderately firm, but business has been rather slow at the advance. Most of the large consumers have fair supplies which they secured at the old prices, and are not likely to stock up much under the present condition of the market until their holdings are reduced to small compass. The outward movement is of fair volume, most of the flour going forward on contract.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

## BARLEY.

Market has developed additional firm-

ness since last review, the improvement being largely due to dry weather influences. Particularly has the market for feed barley ruled against buyers, there being very little difference between values for feed descriptions and the prices prevailing for brewing and export barley. Most of last season's barley was of high grade, which accounts for the more than ordinarily narrow range in quotations. In Chevalier there is little now doing, present offerings and demand being both light, leaving values largely nominal for this variety.

Feed, No. 1 to choice.....	83 3/4 @ 86 1/4
Feed, fair to good.....	82 3/4 @ 83 3/4
Brewing, No. 1 to choice.....	86 1/4 @ 90
Chevalier, No. 1 to choice.....	92 3/4 @ 1 00
Chevalier, poor to fair.....	82 3/4 @ 85

## OATS.

Firmness continues to prevail in the market for this cereal, and no probability of buyers being able to operate to any better advantage later on. The recent heavy purchases of the Government have had much to do with stiffening the market. Prices now current in Oregon and Washington hardly admit of laying down supplies at best values quotable here.

White Oats, fancy feed.....	1 37 1/4 @ 1 42 1/4
White, good to choice.....	1 30 @ 1 40
White, poor to fair.....	1 20 @ 1 27 1/4
Gray, common to choice.....	1 27 1/4 @ 1 37 1/4
Milling.....	1 35 @ 1 42 1/4
Surprise, good to choice.....	1 37 1/4 @ 1 42 1/4
Black Russian.....	1 10 @ 1 30
Red.....	1 15 @ 1 40

## CORN.

Not much offering of any sort, and especially is choice Yellow in limited stock. Quotable values have continued close to the figures given a week ago, and no large quantities of choice corn are obtainable at these figures. There is some poor corn on the market for which it would be impossible to realize inside quotations.

Large White, good to choice.....	1 40 @ 1 45
Large Yellow.....	1 45 @ 1 50
Small Yellow.....	1 55 @ 1 60

## RYE.

Market is not burdened with offerings, and holders are contending for full quotations or more, but the immediate demand at prevailing values is not brisk.

Good to choice, new.....	85 @ 87 1/4
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## BUCKWHEAT.

Recent arrivals have given local millers a fair supply for the time being. Previously quoted values, however, are being maintained.

Good to choice.....	1 70 @ 1 75
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## BEANS.

The bean market has been inclining in favor of sellers, not so much on account of any active demand as of limited offerings. While the last crop was of fair volume, it came on a comparatively bare market, and there was a tolerably active movement in new beans in the early part of the season, so that present supplies in this center, in either first or second hands, are by no means heavy. The lack of rain up to date has caused many holdings to be withdrawn temporarily, awaiting further developments as regards prospects for coming crop.

Pea, fair to good, 100 lbs.....	3 50 @ 4 00
Small White, good to choice.....	3 00 @ 3 25
Lady Washington.....	2 90 @ 3 15
Pinks.....	2 00 @ 2 20
Bayos, good to choice.....	2 50 @ 2 65
Reds.....	2 50 @ 3 00
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	4 50 @ 4 60
Black-eye Beans.....	3 50 @ 3 65
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

## DRIED PEAS.

Not much doing in this line. Quotable values and the general tone of the market remain without especial change. Spot supplies are largely of the Green variety, causing the market for the same to be easier in tone than for Niles.

Green Peas, California.....	1 50 @ 2 00
Niles Peas.....	1 75 @ 1 80

## WOOL.

There would probably be considerable business doing if the wools were here to admit of any special activity. Local supplies have been worked down to small compass and include little other than odds and ends and seriously defective stock, for which there is no special inquiry. The market shows healthy tone, but owing to the inactivity prevailing, values for the time being are necessarily largely nominal, being based on prices paid when latest noteworthy transfers were effected.

## SPRING.

Southern, defective, 7 mos.....	7 @ 8
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	10 @ 12

## FALL.

Humboldt and Mendocino.....	11 @ 12
Northern Mountain, free.....	9 @ 10

Northern Mountain defective.....	8 @ 9
Middle Counties.....	8 @ 10
San Joaquin and Plains.....	6 1/4 @ 8 1/4
San Joaquin Lambs.....	7 1/4 @ 9

## HOPS.

There is a fair inquiry for hops of desirable quality, with buyers naming about 11c for choice, and holders contending for a cent or more advance on above figure. Prospects are favorable for a pretty thorough clean-up before next season's crop becomes available, but it is not so certain about any marked improvement in prices being established, as it is out of the ordinary to have much fluctuation in hop values during the latter part of the season or after the turn of the year, most of the business being done in the autumn or in the early winter months.

Good to choice, 1901 crop.....	10 @ 12
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## HAY AND STRAW.

Market is firm and higher for hay, prices having been advanced in consequence of the dry weather. Should there be no rains for a fortnight or more, values are likely to go still higher. If there should be a liberal rainfall soon, it is doubtful if present quotations for hay could be sustained. Straw rules steady, under light offerings.

Wheat, good to choice.....	9 00 @ 13 00
Wheat and Oat.....	9 00 @ 12 00
Tame Oat.....	7 50 @ 10 50
Wild Oat.....	7 00 @ 9 50
Barley.....	7 00 @ 8 50
Alfalfa.....	9 00 @ 10 00
Clover.....	6 00 @ 8 00
Compressed.....	9 00 @ 13 00
Straw, 3/4 bale.....	35 @ 50

## MILLSTUFFS.

A firm market is being experienced for Bran, Middlings and Shorts, with spot supplies hardly equal to the immediate demand. The last quoted advance on Rolled Barley is being well maintained. Prices for Milled Corn continue at the same high range as for some weeks past.

Bran, 3/4 ton.....	18 00 @ 19 00
Middlings.....	21 00 @ 22 00
Shorts, Oregon.....	18 50 @ 19 50
Barley, Rolled.....	18 50 @ 19 50
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	30 00 @ 31 00

## SEEDS.

Mustard Seed offering is mostly the Trieste variety, for which the market is easier. Previous values for Yellow Mustard remain in force. Alfalfa is offering at unchanged figures, but there is very little doing in the same at present. Flaxseed is arriving in moderate quantities from the north, and is going mainly to the oil works on contract.

	Per ctt.
Alfalfa, Cal.....	7 25 @ 7 50
Alfalfa, Utah.....	8 25 @ 8 75
Flax.....	2 40 @ 2 60
Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 85 @ 3 00

	Per lb.
Canary.....	3 1/4 @ 3 1/2
Rape.....	1 1/2 @ 2 1/4
Hemp.....	3 1/4 @ 3 1/2

## BAGS AND BAGGING.

There is very little doing in this line. A good soaking rain is needed to stir up the Grain Bag trade. Calcuttas are being offered for future delivery at comparatively easy figures, but no orders of consequence are being booked.

Calcutta Grain Bags, buyer June-July.....	6 @ 6 1/4
Calcutta Grain Bags, spot.....	6 1/4 @—
San Francisco Grain Bags, 22x36, spot.....	— @—
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	8 1/4 @—
Gunnies.....	@—
Bean Bags.....	5 1/4 @ 5 1/2
Fruit Sacks, cotton, three sizes.....	5 1/4, 6, 6 1/4
Fruit Sacks, Jute.....	7 @ 7 1/4

## HIDES, PELTS AND TALLOW.

The general features of this market, as also quotable values, remain virtually as last noted. Sound Hides are in fair demand at full current rates, the proportion of this sort arriving at present being rather light. Tallow is not lacking for custom, there being a demand at figures quoted for all coming forward.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @—	9 1/4 @—
Medium Steers, 48 to 56 lbs.....	10 @—	8 1/4 @—
Light Steers, under 48 lbs.....	9 @—	8 @—
Heavy Cow Hides, over 50 lbs.....	9 @ 9 1/4	8 1/4 @—
Light Cow Hides, under 50 lbs.....	9 @—	8 @—
Stags.....	6 @ 7	— @—
Wet Salted Kip.....	9 @ 9 1/4	8 @—
Wet Salted Veal.....	9 @ 9 1/4	8 @—
Wet Salted Calf.....	10 @—	9 @—
Dry Hides.....	16 @ 16 1/4	14 @—
Dry Kip and Veal, 11 to 16 lbs.....	14 @—	12 @—
Dry Calf, under 4 lbs.....	19 @—	16 @—
Salted Horse Hides, large.....	2 75 @—	— @—
Salted Horse Hides, medium.....	2 25 @—	— @—
Salted Horse Hides, small.....	1 50 @—	— @—
Dry Horse Hides, large.....	1 75 @—	— @—
Dry Horse Hides, small.....	1 25 @—	— @—
Dry Colts' Hides.....	50 @—	— @—

Pelts, long wool, 3/4 skin.....	90 @ 1 00
Pelts, medium, 3/4 skin.....	60 @ 70
Pelts, short wool, 3/4 skin.....	30 @ 40
Pelts, shearing, 3/4 skin.....	15 @ 30
Deer Skins, best summer.....	35 @—
Deer Skins, good medium.....	— @ 30
Deer Skins, thin winter.....	— @ 20
Elk Hides.....	10 @ 12
Tallow, good quality.....	5 @ 5 1/4
Tallow, No. 2.....	4 1/4 @ 4 1/2
Goat Skins, perfect.....	30 @ 37 1/2
Goat Skins, small.....	10 @ 20
Kid Skins.....	5 @ 10

## HONEY.

There are no changes to record in quotations, but outside figures are more in accord with jobbing prices than with the views of wholesale buyers. The inquiry is light. Offerings are not heavy, however, either at this center or at interior producing points, and in consequence of dry weather the tendency of values is to more firmness.

Extracted, White Liquid.....	5 1/4 @ 6
Extracted, Light Amber.....	4 1/4 @ 5
Extracted, Amber.....	4 @—
White Comb, 1 lb frames.....	11 @ 12 1/4
Amber Comb.....	8 @ 10
Dark Comb.....	6 @ 7

## BEESWAX.

Market is lightly stocked. More than is offering could be readily accommodated with custom at prevailing rates.

Good to choice, light, 3/4 lb.....	26 @ 28
Dark.....	24 @ 25

## LIVE STOCK AND MEATS.

Beef is ruling quiet, with slight tendency to easier figures, but that values for choice will decline to any great extent very soon is not probable. Mutton is being crowded to market a little faster than the immediate demand warrants, causing prices to incline in favor of buyers. Hogs are in only moderate receipt and are meeting, as a rule, with prompt custom at full current rates, being needed mostly to supply the immediate demand for fresh pork.

Beef, first quality, dressed, net 3/4 lb.....	7 1/4 @ 7 1/2
Beef, second quality.....	7 1/4 @—
Beef, third quality.....	6 1/4 @ 7
Mutton—ewes, 7 @ 7 1/4; wethers.....	7 1/4 @ 8
Hogs, hard grain fed, 150 to 250 lbs.....	5 1/4 @ 6
Hogs, small, fat.....	5 1/4 @ 6
Hogs, large, hard, over 250 lbs.....	5 1/4 @ 5 1/2
Hogs, country dressed.....	6 1/4 @ 7
Veal, small, 3/4 lb.....	8 @ 9 1/4
Veal, large, 3/4 lb.....	8 @ 8 1/4
Lamb, spring, 3/4 lb.....	11 @ 12 1/4

## POULTRY.

The market for domestic has been handicapped the past week by free arrivals of Eastern, the receipts from the other side of the Rockies averaging over a car per day of live poultry, in addition to which considerable Eastern dressed stock was offering, both in and out of cold storage. Turkeys ruled easier, as did also most kinds of Chickens. The market throughout was quiet, and the greater part of the time lacked firmness for other than choice young.

Turkeys, dressed, choice.....	16 @ 18
Turkeys, alive, Hens, 3/4 lb.....	14 @ 15
Turkeys, alive, Cockerels, 3/4 lb.....	13 @ 14
Hens, California, 3/4 dozen.....	4 00 @ 5 00
Roosters, old.....	4 00 @ 4 50
Roosters, young (full-grown).....	4 50 @ 5 50
Fryers.....	4 00 @ 4 50
Broilers, large.....	4 00 @ 4 50
Broilers, small to medium.....	3 50 @ 4 00
Ducks, old, 3/4 dozen.....	5 00 @ 6 00
Ducks, young, 3/4 dozen.....	6 00 @ 7 00
Geese, 3/4 pair.....	1 50 @ 1 75
Goslings, 3/4 pair.....	1 75 @ 2 00
Pigeons, old, 3/4 dozen.....	1 25 @ 1 50
Pigeons, young.....	2 00 @ 2 50

## BUTTER.

There were no heavy stocks of choice to select fresh, and for butter of this class the market was moderately firm at values much the same as were in force the preceding week. Common grades of fresh were not eagerly sought after, most buyers taking cold storage butter in preference, the latter being in fair supply and being offered at fully as easy rates as current for some time past.

Creamery, extras, 3/4 lb.....	25 @—
Creamery, firsts.....	22 @ 23
Creamery, seconds.....	20 @ 21
Dairy, select.....	21 @ 22
Dairy, firsts.....	18 @—
Dairy, seconds.....	16 @—
Mixed store.....	13 @ 14
Creamery in tubs.....	19 @ 21
Picked Roll, 3/4 lb.....	@—
Firkin, California, choice to select.....	@—
Firkin, common to fair.....	@—

## CHEESE.

Of other than strictly select new cheese, there is more domestic product in stock in the wholesale market than is required for the immediate demand, and for the ordinary run of offerings the situation favors the buyer. Mild new of fine quality is selling at fair advantage.

California, fancy flat, new
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market devoid of firmness and values tending to still lower levels. All handlers, wholesale and retail, are endeavoring to keep their stocks down to the lowest possible point, with a view of preventing losses likely to be experienced when values are tumbling. It is lack of confidence rather than the quantity of eggs offering which is causing weakness.

California, select, large, white and fresh. 26 @—  
California, select, irregular color & size. 25 @—  
California, good to choice store. 23 @24  
California, common to fair store. —@—  
Eastern, good to choice. —@—  
Cold Storage. —@—

#### VEGETABLES.

There were no heavy stocks of either fresh or Winter vegetables. Fresh were mainly from Los Angeles district, and such as were in prime to choice condition brought as a rule good figures. Peas were in tolerably fair receipt, including some of quite ordinary quality, market for latter kind ruling weak. Onions were held at about same range of values last quoted, but demand at full current figures was not active.

Beans, String, # lb. 10 @ 12½  
Beans, Wax, # lb. — @ —  
Cabbage, choice garden, # 100 lbs. 50 @ —  
Cauliflower, # dozen. 40 @ 50  
Cucumbers, Bay, # large box. — @ —  
Egg Plant, Los Angeles, # lb. 15 @ 17½  
Garlic, # lb. 2½ @ 3½  
Mushrooms, # lb. — @ —  
Onions, Yellow Danver, # cental. 1 50 @ 2 00  
Peas, Sweet garden, # lb. 3 @ 5  
Peppers, Green, Los Angeles, # lb. 10 @ 12½  
Peppers, Bell, # box. — @ —  
Rhubarb, # lb. — @ —  
Squash, Marrowfat, # ton. 8 00 @ 10 00  
Summer Squash, # box. 1 00 @ 1 25  
Tomatoes, Los Angeles, # box. 1 00 @ 1 50

#### POTATOES.

While there has been some movement outward the past week, it has been mostly of low-priced stock. Shipping inquiry has been in the main limited to figures below the views of sellers, especially on desirable qualities. While holders were in most instances opposed to granting material concessions to buyers, the market could not be termed strong. Any pressure to realize would have resulted in reduced quotations. Arrivals from Oregon and Washington were of tolerably free proportions. Sweet potatoes were in only moderate supply and market ruled rather firm for best qualities.

Burbanks, Salinas, # 100 lbs. 1 40 @ 1 60  
River Burbanks in sacks, # cental. 90 @ 1 25  
Petaluma and Tomales Burbanks. 1 20 @ 1 35  
Oregon Burbanks. 1 30 @ 1 60  
River Reds. 1 40 @ 1 50  
Sweet potatoes, Merced, # cental. 1 15 @ 1 25

#### The Fruit Market.

#### FRESH FRUITS.

The market for Apples shows much the same condition as previously noted. There are not many offerings of any description, but only for choice to select is there special inquiry or are firm prices obtainable. For fancy 4-tier Apples \$2 per box is more readily realized than is 75c @ \$1 for fair stock. There was no other deciduous fruit on market worth mentioning. A few Strawberries were received, but the quantity was too small to warrant quoting. A few Casaba Melons from Napa were offering at \$1.50 per crate.

Apples, fancy, # 4-tier box. 1 75 @ 2 00  
Apples, good to choice, # 50-lb. box. 1 00 @ 1 50  
Apples, common to fair, # 50-lb. box. 50 @ 75

#### DRIED FRUITS.

While the market for cured and evaporated fruits has been as a whole quiet since date of last review, it continues firm, with no heavy offerings of any description and holders confident that remaining stocks of 1901 crop will all find their way into consuming channels before another season's output will come upon the market. Handlers are looking forward to a fairly active Spring demand, and should such be experienced, which is altogether probable, a clean-up may be looked for before the Summer season, leaving the market in excellent shape for receiving the dried fruit output of 1902. While quotable values are without important change, holders are inclined to ask more than quotations. Especially is this the case in regard to good to choice qualities of Apples, Apricots, Peaches and Pears, supplies and offerings of these descriptions being of decidedly light proportions. Prunes are ruling firm on the 3½ @ 3½c basis for the four sizes of last crop, latter figure being for Santa Claras. Old are quotable at 2½ @ 3c for the four sizes and are more readily obtainable at these figures than are new at the higher prices quoted, although there is no special selling pressure on either old or new. Old are in larger spot supply than new, however, while latter are naturally most desirable and most eagerly sought after. Any changes in prices of Prunes during the balance of the season are almost certain to be in favor of the selling interest, and this remark applies with equal force

to desirable qualities of dried fruit of every variety.

#### EVAPORATED OR BLEACHED.

Apricots, Royal, prime. 8 @ 8½  
Apricots, Royal, choice, in sacks, # lb. 8½ @ 9  
Apricots, Moorpark. 10 @ 12  
Apples, in 50-lb boxes, rings, pressed, fancy. 8 @ 8½  
Apples, 50-lb boxes, rings, pressed, good to choice. 6½ @ 7½  
Nectarines, # lb. 5 @ 6  
Peaches, unpeeled, fancy. 8 @ 9  
Peaches, unpeeled, choice. 6½ @ 7½  
Peaches, peeled, in boxes. 12 @ 14  
Pears, halves, choice to fancy. 6½ @ 8½  
Plums, Red and Black, pitted. 5½ @ 6½  
Plums, White and Yellow. 5½ @ 6½  
Prunes, 4 sizes, in bags, 3¼ @ 3½c; 50-60s, 4¼ @ 4½c; 60-70s, 4 @ 4½c; 70-80s, 3½ @ 3¾c; 80-90s, 3¼c @ —; 90-100s, 3c @ —; these figures for 1901 crop.

#### COMMON SUN-DRIED.

Apricots. 7 @ 7½  
Apples, sliced. 3 @ 5  
Apples, quartered. 3½ @ 4½  
Figs, Black. — @ —  
Figs, White. — @ —  
Peaches, unpeeled. 4½ @ 6  
Pears, prime halves. 4½ @ 5  
Plums, unpitted, # lb. 1½ @ 2½

#### RAISINS.

Market remains practically the same as at date of last review, being decidedly strong in tone, with offerings of exceedingly light volume. Quotations are likely to be marked up any day. It is altogether probable that present holdings in the hands of packers and jobbers will be practically wiped out before the summer opens.

Following are the prices for new crop, as fixed by the Fresno Association:

Loose Muscatels— Per lb.  
4-crown. 5½  
3-crown. 5¼  
2-crown. 4¾  
Seedless Muscatels. 5  
Seedless Sultanas. 5½  
Thompson's Seedless. 6  
Seeded—  
3-crown, 1-lb. carton. 7  
2-crown, 1-lb. carton. 6¾  
London Layers, 20-lb. boxes—  
2-crown. —  
3-crown. 1 50

#### CITRUS FRUITS.

The frosty weather the current week has operated against activity in the Orange market, and, with offerings larger than preceding week, prices inclined in favor of buyers. Choice large size Navels continued most in favor, but only in a very small and limited way were sales of most select possible at over \$2.50 per box. The market for Lemons ruled quiet, the quotable range of values showing no appreciable change, but only for choice to select could prices be said to be well maintained. Limes were held firmer than last quoted, with stocks and demand both rather light.

Oranges—Navels, # box. 1 25 @ 2 75  
Seedlings, # box. 50 @ 1 00  
Tangerines, # box. 65 @ 1 25  
Lemons—California, select, # box. 2 25 @ 2 50  
California, good to choice. 1 50 @ 2 00  
California, common to fair. 75 @ 1 25  
Grape Fruit, # box. 1 25 @ 2 00  
Limes—Mexican, # box. 5 00 @ 5 50

#### NUTS.

Not much movement in either Almonds or Walnuts at present, but stocks of both are well reduced, especially of No. 1 to choice, and market is tolerably firm. Business from this time forward will be necessarily largely confined to small jobbing operations. Peanuts are without quotable change, there being a moderate amount of business at prevailing values.

California Almonds, shelled. 15 @ 18  
California Almonds, paper shell, # lb. 10 @ 12  
California Almonds, soft shell. 8 @ 9  
California Almonds, hard shell. 5 @ 6  
Cal. White Walnuts, No. 1 soft shell. 9 @ 9½  
Cal. White Walnuts, No. 2 soft shell. 7 @ 8  
Cal. White Walnuts, No. 1 hard shell. 7½ @ 8½  
Cal. White Walnuts, No. 2 hard shell. 6 @ 7  
Peanuts, California, fair to prime. 4½ @ 5½  
Peanuts, Eastern, hand-picked. 5½ @ 6  
Pine Nuts. 5 @ 6

#### WINE.

Market since last review has developed no special changes. There is not much wine of any description offering in a wholesale way, and market is quite firm in tone. Dry wines of last vintage are quotable at 22 @ 25c per gallon, with none of high grade offering at lower figure, and only select salable in a regular way at the higher price. Receipts of wine at San Francisco in December were 15,344,000 gallons, as against 14,547,000 gallons for December, 1900, showing an increase of 797,000 gallons. In December, 1899, receipts were 15,051,000 gallons.

#### California Dried Fruit at New York.

NEW YORK, Jan. 15.—Evaporated apples, common, 7 @ 8½c; prime wire tray, 9½ @ 9¾c; choice, 9¾ @ 10c; fancy, 10½ @ 11c.

California Dried Fruits.—Market is quiet, but in the main firm, with offerings rather light. Prunes, 3½ @ 3¾c.  
Apricots, Royal, 9½ @ 10c; Moorpark, 10 @ 14c.  
Peaches, unpeeled, 7½ @ 10c; peeled, 16 @ 18c.

#### Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks. 227,421	3,611,793	3,591,740
Wheat, centals. 342,221	5,320,927	3,688,225
Barley, centals. 87,172	4,576,223	2,517,537
Oats, centals. 24,467	676,066	458,396
Corn, centals. 4,870	58,612	73,855
Rye, centals. 3,365	112,670	98,062
Beans, sacks. 3,277	534,534	474,542
Potatoes, sacks. 28,895	865,485	942,446
Onions, sacks. 2,892	149,211	130,459
Hay, tons. 2,609	87,133	101,293
Wool, bales. 156	41,647	22,169
Hops, bales. 33	6,842	6,228

#### EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks. 88,264	2,527,826	2,041,408
Wheat, centals. 308,355	4,859,814	3,563,144
Barley, centals. 55,982	3,520,682	1,493,450
Oats, centals. 145	2,130	46,979
Corn, centals. 106	8,701	2,269
Beans, sacks. 106	18,042	9,533
Hay, bales. 820	6,192	82,130
Wool, pounds. 56	522,721	233,621
Hops, pounds. 56	442,217	425,807
Honey, cases. 50	5,503	1,632
Potatoes, pack's. 4,048	31,881	63,486

STEAM PLOWING ON BIG CONE RANCH.—Red Bluff News: Plowing on the big ranch of D. S. Cone, in Antelope valley, is being pushed as rapidly as possible while the ground is in such excellent condition for the work. The big traction engine is used for the work and it draws three gangs, of six plows each, making eighteen plows in all which turn a swath 20 feet in width. The plows cut deep and turn the ground over thoroughly and they are pulled faster through the earth than can possibly be done with horses. A gentleman who visited the ranch lately saw the engine at work and he said that as he drove along by the side of it, his team going at a brisk walk, it gradually gained on him and soon left him behind. At the present time wood is used for fuel and it is said that steam is blowing off most of the time. There being plenty of wood on the ranch, it is found to be as cheap as oil and gives equally as much heat.

EXCHANGING BUDS.—Lindsay Gazette: John Hedburg, citrus nurseryman, has been working for some time, in co-operation with Horticultural Commissioner Baggs, to locate and obtain some foreign varieties of citrus fruit tree buds for experiment, and has at last succeeded in locating parties at Poona, India, who are anxious to exchange buds and have already taken steps to do so. Some time ago Mr. Hedberg had a tin tube constructed in which he shipped six varieties of buds to George A. Gammie, the professor of the College of Science at Poona, and a letter in reply thanks him for the favor and states that three of the buds arrived in perfect condition and that the other three were decayed, and in a second letter just received Mr. Hedburg the professor states that he has forwarded six varieties of orange and guava buds.

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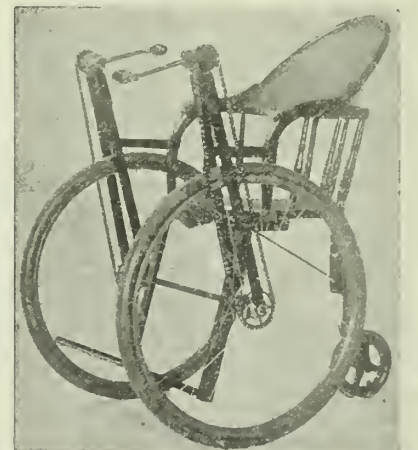
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### Southern California Products.

From the midwinter issue of the Los Angeles Times the following interesting paragraphs are gleaned:

**CITRUS FRUIT SHIPMENTS.**—The citrus fruit harvest of the past year reached the splendid proportions of 24,100 carloads, of which 21,173 were oranges and the balance lemons, tangerines and grape fruit. An idea of the advancement of the industry may be gained from the fruit statistics of ten years ago. It is stated that the entire fruit products of California in 1890 were less than 17,000 carloads. In 1900 the citrus products alone had reached that figure. With the last orange crop exceeding by 5000 carloads the output of fresh citrus and deciduous fruits, cured and canned fruits, raisins and wines of 1890, the progress in the cultivation of oranges may be understood. In boxes the orange and lemon output for 1901 amounts to 8,724,200, and in pounds to 610,694,000. Ten years ago the citrus fruit industry was in its experimental stage.

**PROGRESS IN GRAPE CULTURE.**—Southern California has made great progress in the cultivation of grapes during the past year. Large tracts in Los Angeles, Orange and San Bernardino counties have been planted to vineyards since last January, and in no other line of fruits, except the citrus, have the developments been so extensive. Some years ago the vineyards were partially destroyed by a new vine disease. It is yet present in a few sections, but viticulturists do not hesitate to replant. At the present rate of increase this portion of the State in another year will reach its former standard as a producer of wine, table and raisin grapes.

**THE ENGLISH WALNUT CROP.**—The English walnut is a commodity with which the world never seems to be surfeited, but a few of the southern counties are doing all they can to supply the demand. There is a steady increase in the area planted, the progress of the year being marked in the extension of this industry where the soil is suitable for the cultivation of the nut. Last season the walnut crop of southern California amounted to about 600 carloads, a fungus disease having reduced the yield to some extent in a few of the leading districts. Rivera, Downey,

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Santa Ana, Fullerton, Ventura county and a few points in San Diego and Santa Barbara are the walnut growing centers of the country, Rivera and other points in the Los Nietos valley producing nearly half of all the nuts shipped from the southern territory.

**RED OATS.**—Southern California is developing a new farm industry, the growing of red oats. This variety is not new, but the demand for it will increase the acreage rapidly at Escondido, Oceanside, the Simi valley and at other points where it has been tried. Over 75,000 sacks of these oats were sent to Texas this season for seed, the other 25,000 sacks being retained for planting in local territory. About 125,000 centals of corn were grown upon the damp lands and coast plains last season.

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## THE VETERINARIAN.

### Cerebritis or "Staggers" in Horses.

The Kansas Experiment Station says that serious losses are occurring as a result of feeding wormy, mouldy corn, either when it is fed as a grain ration or when obtained by pasturing in the stalk fields, or when fed upon the cut corn fodder.

The disease is an inflammation of the brain or spinal cord and its coverings (meninges), associated with a breaking down of the nerve tissue of the brain. It is popularly called "staggers," or "mad staggers," because of the prominent symptoms shown.

**SYMPTOMS.**—The symptoms are those of a brain disease. The animal appears blind and only partially conscious; there is often a tendency to turn in a circle to the right or left, and a staggering or a straddling gait. There is usually a trembling of the muscles. As the disease progresses the animal becomes delirious and easily excitable. In many cases the animal will stand with the head or breast against a wall or manger and push. Animals will often eat when badly affected, apparently from force of habit, not because they are hungry. In some cases animals will die in a few hours after they are first noticed ailing. Most of them die within a few days; a few live a week, rarely longer. In a few cases the spinal cord is diseased, while the brain remains nearly normal. In these cases there is inability to control the muscles, or the animal may be unusually sensitive, the least irritation of the skin, even by touching the animal, often causing it to kick violently. Where the spinal cord only is effected the animal frequently recovers. Laxative food should be given, and iodide of potash in one-drachm doses dissolved in water can be given once daily for three or four days.

Mules are rarely affected by this disease.

**TREATMENT.**—Practically all cases, where the brain is the seat of the disease, die, and all methods of treatment so far have proven of no value. The animal should be placed where it will be comfortable, and cannot injure itself or other animals, and supplied with soft laxative food, such as thin bran mash. The only treatment for the disease is preventive, by avoiding the wormy, mouldy corn.

Care should be exercised in handling a horse to avoid injury, as the animal is irresponsible and often in a delirious frenzy.

In some cases horses do not begin to die for a month after being turned into the stalk fields, and they may contract the disease a week, and in some cases ten days, after the mouldy corn has been withheld.

Mouldy or wormy corn does not seem to be injurious to other animals, and can be fed to cattle and hogs without danger.

**GREAT WALNUT YIELD.**—The Anaheim Gazette: A meeting of the stockholders of the Santa Ana Valley Walnut Growers' Association was held Monday to conclude the season's business and to declare a final dividend to stockholders. The report of Secretary J. D. Wilder upon the season's work shows a total of 1,490,452 pounds of walnuts were shipped from the Association warehouse during the year, making seventy-five carloads. Of this amount 1,219,007 pounds were first grade soft shell nuts. The next largest amount, 105,120 pounds, was of hard shell first grade nuts. The total receipts of the season were \$122,930.96, more than double that of last year, and far in excess of anything previously handled by the Association. The cost of handling the seventy-five carloads was only \$5894.90, or 40 cents per 100 pounds, and the introduction of new machinery promises to greatly reduce the operating expenses for next year. Prices for the nuts were lower than last year, because of a heavy crop, which is universally pronounced the best, both in respect to quality and quantity, ever harvested in the valley. The membership in the Association includes 197 growers, who control 1400 acres of walnuts. Hundreds of acres of new land will be brought into the Association next year through the bringing in of new orchards which have been recently planted.



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### New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR WEEK ENDING DECEMBER 31, 1901.

690,127.—TELEPHONE—F. W. Alston, S. F.  
690,005.—PREPARING PRUNES—Anderson & Swink, San Jose, Cal.  
690,224.—DENTAL APPLIANCE—H. C. Bagby, Santa Maria, Cal.  
690,359.—DRILLING BIT—A. B. Burt, Redlands, Cal.  
689,013.—CORK FOR BOTTLE—D. Chambers, San Jose, Cal.  
690,100.—FLUID COMPRESSION—A. E. Chodzko, S. F.  
690,021.—TERRET—F. H. Eilers, S. F.  
690,144.—SAD IRON—C. F. Grubbs, Portland, Or.  
689,874.—BOOK BINDING—F. Hager, Portland, Or.  
690,278.—EXTRACTING GOLD—W. F. Heathman, Santa Ana, Cal.  
690,304.—STOP MECHANISM—F. T. Leilich, S. F.  
690,305.—SEWING MACHINE—F. T. Leilich, S. F.  
690,067.—PLOW—A. F. Maulhardt, Montalvo, Cal.  
690,310.—COFFEE POT—J. A. McBride, Elko, Nev.  
690,177.—LOOM SHUTTLE—J. H. Northrop, Tustin, Cal.  
690,078.—PRESSURE REGULATOR—P. H. Reardon, S. F.  
690,375.—AGITATING MACHINE—G. Rubsch, Jr., Los Angeles, Cal.  
690,081.—SLIDING DOORS—D. Schuyler, Los Angeles, Cal.  
690,328.—HARROW—J. Smith, Tekoa, Wash.  
690,304.—LADDER—Strauss & Johnson, Seattle, Wash.  
690,085.—TOOTH CROWNS—J. F. Twist, S. F.  
690,089.—UNLOADING APPARATUS—G. P. Wetmore, S. F.  
35,499.—DESIGN—A. Heunisch, S. F.  
35,518.—DESIGN—A. W. Miller, Riverside, Cal.

### Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

HARNESS TERRETS.—No. 690,021. Dec. 31, 1901. F. H. Eilers, San Francisco, Cal. The object of this invention is to improve the terret or ring which is attached to the pad or saddle of harness through which the driving reins pass, so that the rein can be easily introduced or removed at any part of its length without the necessity of pulling the ends through. The terret has a portion of its periphery cut away provided with sockets, and balls with spring pressure behind them normally



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close the opening. If the edge of the rein is pressed against the balls they will separate and allow the rein to pass in or out, but the pitch of the edges of the opening is such that the rein will not come out of its own action.

APPARATUS FOR PREPARING PRUNES.—No. 690,005. Dec. 31, 1901. W. C. Anderson and J. L. Swink of San Jose, Cal. Assignor to Anderson Prune Dipper Co. of Santa Clara, Cal. This invention is designed to prepare dried prunes and like fruits by subjecting them to steam or hot water. It consists of two horizontally journaled concentric cylinders with an intermediate spiral conducting blade, means for admitting the material to one end and discharging it at the opposite end. These cylinders are journaled in a suitable containing tank, so that the fruit in passing through them may be submerged in the water or subjected to steam if desired. The discharge end has radial divisions, and there is a receiving cone with ribs upon its surface which delivers the fruit from the end of the apparatus. The buckets are fixed on the outer head of the cylinder projecting to various distances, so that the fruit is evenly and gradually discharged as the cylinders rotate.

BOTTLE CORK.—No. 690,013. Dec. 31, 1901. D. Chambers, San Jose, Cal. One-half assigned to S. Chambers and B. F. Kent of same place. The stopper may be made of cork or any suitable material and has parallel holes extending through it and a recess in the top. A wire staple passes through these holes and through a washer in the interior, which washer presses against the bottom of the cork when the loop of the wire made exterior to the cork is pulled upon. This loop may be normally concealed within the central recess in the top of the cork.

VESSEL UNLOADING APPARATUS.—No. 690,089. Dec. 31, 1901. G. P. Wetmore, San Francisco, Cal. This device is designed to unload barges or vessels. It consists of a series of compartments having discharge chutes with controlling gates and an endless traveling carrier located beneath these compartments and near the bottom of the hull of the vessel. Either of the compartments may be discharged by means of a gate and the carrier will transfer the material to the end of the vessel while it is raised by an elevator and delivered upon the wharf or any other desired point.

APPARATUS FOR FORMING SEAMLESS TOOTH CROWNS.—No. 690,085. Dec. 31, 1901. J. F. Twist, San Francisco, Cal. This invention is designed for the formation of seamless tooth crowns from caps of thin metal, such as gold. It consists of an interior die having the shape of both the cusp and the lateral surfaces of the crown upon which the crown is fitted and an exterior two-part die of the same shape within which the interior member and tooth crown are placed. In conjunction with this is a mechanism by which the two parts are braced together and the crown is shaped to conform therewith.

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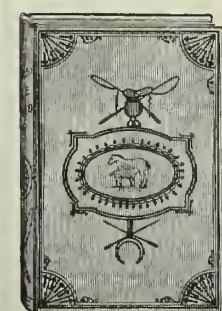
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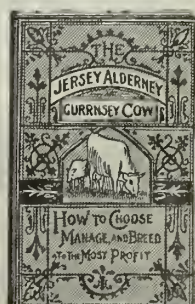
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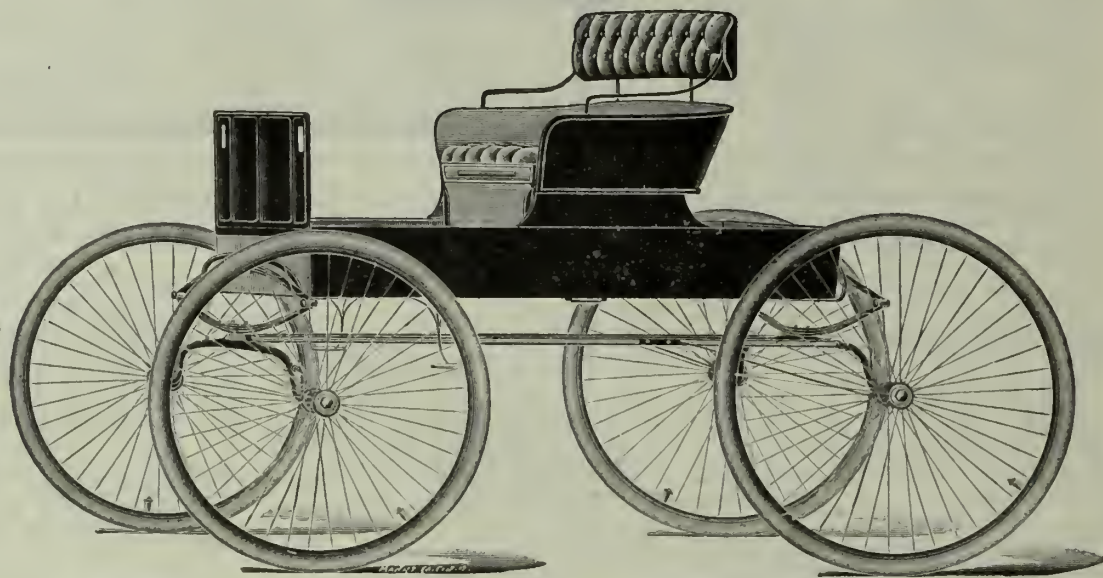
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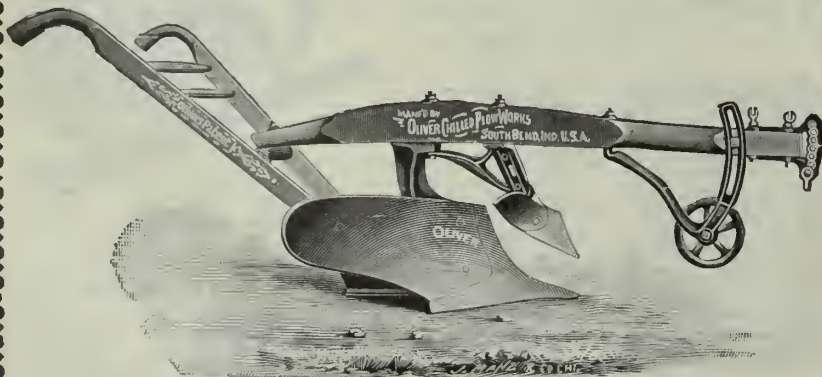


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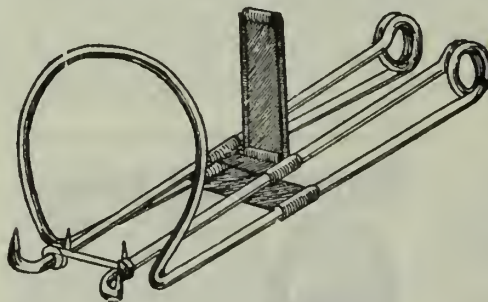
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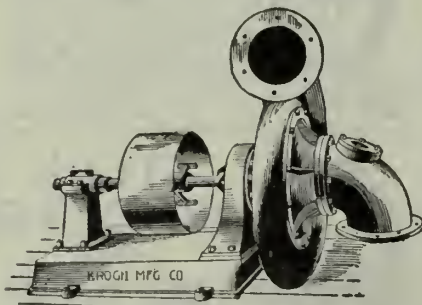
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# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 4.

SAN FRANCISCO, SATURDAY, JANUARY 25, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

### How Things Grow in Fresno County.

The riotous growth of vegetation upon the rich soil and with the favoring temperatures of the great interior valley of California, when ample moisture is available, has been a theme of frequent comment in these columns. We delight in it and are proud of it and enjoy summoning the camera to the witness stand whenever possible to submit new evidence to our readers. This time the views are in Fresno county and they are furnished to the PACIFIC RURAL PRESS by an old subscriber, Mr. Thomas Yost of Kings River, who graduated from a successful business career into farming, and is doing good things in farming because he has carried business spirit and methods into it, and because, we speak it modestly, he has always reinforced his own thought and observation with diligent reading of our columns. Having known this for years of Mr. Yost we take particular pleasure in publishing Mr. Yost's experiences for the benefit of others. We shall soon have a picture and description of his new small-scale lemon house, but this time give glimpses of things he grows. The first picture shows Mr. Yost in his horticultural dress suit trying to reach half way up a stalk of Kafir corn. He is not very likely to succeed because he is only of medium stature and the corn is 18 feet high. Mr. Yost has been trying experiments with growing crops between the rows in his four-year-old orange orchard. First he grew three rows of corn or potatoes between the tree rows until the trees were four years old and saw no injurious effects. Then he tried Kafir corn with the result shown in the picture. Some of the stalks were 18 feet high and in some cases the plants stooled so freely that there were ten tall stalks from a single seed. The orange orchard went out of sight among the Kafirs. But this was not the worse of it, for Mr. Yost found that such tall plants make tremendous roots in his rich mellow soil, and when he started in to get the orchard cleared it required two good horses to snake out a single hill of stubble, and a specially constructed



A Crop of Citron Melons in Kings River Country.

lifting plow was used at that. One season of Kafir corn was enough for Mr. Yost. He has brought his fine four-year-old orange trees into sight again and he does not propose to grow any more such tall grass in the orchard even though it does make excellent pig feed.

But this is not the only trouble Mr. Yost has had with nature's profusion. By an accident such as will happen on all well-regulated farms, the intelligent hired man helped himself to pie-melon seed in the seed-room and the plat which was set apart for watermelons brought forth what the picture shows.

It is not exactly pie melon, but rather citron melon, but one is about as far from a watermelon as the other. The hills were put 20 feet apart, but the prolific vegetable covered the ground with vines and berries just the same. No estimate is made of total weight of the crop, but there were more than Mr. Yost had any use for, although he fed them to their full consuming capacity to his horses, cows and chickens and boiled them for his hogs, until he has had to tell his neighbors to help themselves so as to get the ground cleared up before spring. The result was that last week the fruit was being drawn away in four-horse wagonloads to delight the stock of the neighborhood. Those who live in rather thermal regions like that of Mr. Yost's could take a hint for early winter feed when other things are scarce by getting a supply of these prolific pie melons along with the squashes, beets, etc., which should be summer-planted whenever moist land is available to fill the winter shortage in the feed lot.

In his last report to the supervisors, Mr. N. W. Motheral, horticultural commissioner, says of the pear blight in Kings county that, while they have pear blight all over the State, the rich land and irrigation in his district keep the pear trees tender and growing all the year—the stage in which they are the most susceptible to disease. Mr. Motheral has discovered that Duchess and Kieffer varieties are almost immune, and he thinks if we would get our stock from Japan or China, and graft these varieties into that stock and then graft a second time, the Bartlett into this as stock, we would increase the power of resistance. This is at least worth the experiment, although, as we understand it, these Asiatic varieties have not proved so free from the disease as was held at one time.

THE consumption of foreign fruits in Germany is increasing from year to year. According to official statistics, the importation of apples in 1899 amounted to over \$10,000,000; pears, about \$2,500,000; cherries, \$430,000; plums and "stone fruits," \$2,800,000; and berries and other fruits, over \$500,000—making a total of \$16,430,000. The largest shipments of fresh fruits come from Austria-Hungary, Holland, Belgium, France, Italy and America.



Four Year Old Orange Tree and Kafir Corn of Mr. Thomas Yost, Kings River, Cal.



# PACIFIC RURAL PRESS

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E. J. WICKSON. Horticultural Editor

San Francisco, January 25, 1902.

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## The Week.

The chief event of the week is the return of the rains and a certain amount of precipitation has brightened things in all parts of the State. The latter part of January often removes the cause of apprehension. It is still early in most parts of the State for the most gratifying results of rainfall, and the receipts this week, though not large in themselves, are having a very satisfactory effect through what they may portend.

Wheat is firmer and slightly advanced. There has been an active outward movement, six cargoes having cleared and three of them in one day. The total amount is 21,300 tons and the value \$462,300. Ocean freights are barely steady; two more ships have come in under charter at rates considerably above the rates they could now command. The flour exports this week are the heaviest on record: a total of 130,380 barrels, with over 100,000 barrels from California mills, practically all going to China. Barley is the same as last week—steady and firm. The railroad concedes to-day a reduction of \$10 per ton on carriage to all eastern points. Oats and corn are unchanged; buckwheat is weaker. Beans are steady and stiffly held on the outlook, though Eastern markets are still weak. Bran is easier but unchanged, and so is hay. Beef lacks strength, but mutton is steady and hogs unchanged, though increasing Eastern and domestic receipts favor lower prophecies. Butter is selling well, is firm at going rates and is clearing up currently. Cheese is unchanged. Eggs are another step down and are being pushed down hard, in hope of reaching a range in favor of speculation. Poultry is slow and generally lower, not that the local and Eastern receipts are excessive, but retailers seem to find a slack demand at present. Potatoes are strongly held, but are not moving freely, as buyers are reticent. Onions are steady for choice. Apples are in moderate supply and fair demand for choice at old figures, medium and low grades being rather slow. Oranges are easier with larger receipts. Lemons and limes are unchanged. All cured fruits are in fair condition; there has been a special call this week for dried peaches. Raisins are reported out of growers hands. Nut prices are unchanged. Honey has a tendency to firmness. There is some inquiry for hops, but buyers do not have very high prices; they seem to want hops only at low figures. Wool is firm; scourers are run-

ning on old stock and sending their product East by water; otherwise the market is about empty of wool.

As shown by the statements upon another page of this issue, the effort to secure a strong co-operative organization of California grain growers is now being pushed with much vigor and very encouraging results are being reported. The case on the grower's side is very strong. He is trying to grow grain at prices which are often below the cost of production. The growing of grain, in view of the large world's supply and the competition of new supply countries, is a close business anyway, but still, with the advantages of California's cheapened processes, there would be a fair income in it if the growers could get what the grain is really worth. Instead of that the trade is in such shape that the crop yields profits to every sort of intermediary but none to the grower. The present movement is to facilitate the passage of the crop from the field to the foreign port and to clear its pathway of the absorbing obstructions which now exist. It is a very necessary thing to do and it should appeal to all who own wheat lands as well as to those who are trying to live by leasing them. We can but urge our readers in all localities where meetings are called to attend them, hear the statement of the case and judge for themselves of the practicability and promise of the propositions which are now being made by those who are promoting the proposed organization.

The supporters of the old Grout bill for the regulation of the oleomargarine trade seem to be having it all their own way at Washington. Last week we stated that the Tawney-Grout bill, so called, was being scouted by the old leaders and the straight Grout proposition was showing great strength. It rather looks as though those who proposed the new bill which is so kind to uncolored oleomargarine have no dairy backing, and one is led to suspect that their activity in pushing the revised measure was not altogether in the dairy interest. It is unfortunate that this double head should have been given to the affair, for we see that some farmers' organizations are passing resolutions approving the Tawney-Grout bill, when they certainly want the strongest kind of an enactment in favor of the legitimate product. As we have said, we received the boldest impeachment of the Tawney-Grout measure, and its own propaganda seems to be silent under the arraignment. Evidently the pure grouting is what the situation needs.

A very good tribute to the climate of California is indirectly conveyed in a consular letter from Germany, which describes how beet pulp is dried in Germany by the use of direct fire heat and by the use of steam in order to make it imperishable and transportable for stock-feeding purposes. The pulp is put through a hydraulic press which reduces its 90% of water to less than 5%, and the cake resulting is then comminuted and dried by fire or steam. If this is necessary to do at all in this State, and if the silo will not serve alone for storing beet pulp, we certainly can dry the pulp by the same sun which gives us dried fruits in such perfection. We have to advance considerably before beet pulp receives the same consideration here as it does in Europe for stock feeding, but when that does come we shall not need fire or steam processes for the handling of the refuse product of the sugar factories.

The old canard that artificial honey is made in California, the comb being properly fashioned, filled with glucose, and then capped bee-fashion, has recently been revived in the Eastern papers. It is almost too silly to deny, but still some may be so unskilled in the nature of bee things that they would believe it. The fact is that there has never been a pound of this sort of product made anywhere. It is probably impossible to make a pound of it by the most elaborate machinery or by the most refined hand work. The bee has a trade-mark upon this product which cannot be infringed. But even if it could be done there could not be any motive whatever, for the product would cost many times the price of honest bee work. The report was that a carload of this bogus comb honey went from California to Chicago. It is simply a falsehood whose proper synonym only requires three letters.

## QUERIES AND REPLIES.

### Grafting Pear Trees Affected With Blight.

TO THE EDITOR:—Will it do to cut off pear trees and graft now, instead of waiting for the sap flow? Is it better to graft a foot above the ground or remove the earth and graft into the root? Is it worth while to graft into stumps affected with pear blight? This pear blight puzzles me; I read nothing but conjectures, and experts disagree.—READER.

It is safe to graft even as early as this if the waxing is well done, and it is common practice in large orchards not to wait for the sap flow, but to graft all through the winter. There is usually sap movement enough in the California winter to maintain the life in the scion. It is better to graft into the trunk than to graft into the root, because working into old roots is less apt to make satisfactory union. Part of the old root will decay and when the stress of wind comes the tree is apt to blow over. We would rather replant with healthy, young trees than to work in old roots.

It seems to us also hopeless to graft into a trunk which has been hurt by pear blight, unless you can get below the blighted bark. There would be very little future for the graft put into unhealthy tissue. You might graft into the trunk wherever healthy wood can be found, or graft into the root where the disease extends very low down. This would be the best thing you could do in the way of grafting, although we really believe that trees badly affected are not worthy of grafting at all.

There is reason why we should be in doubt as to proper procedure with this pear blight. It is only recently that it has appeared in California, and only very recently that such injury has been occasioned as is reported from some pears of the San Joaquin valley. Evidently the disease is more virulent and rapid in this State than in the East. It is also more apt to strike the main branches and the trunk in this State than elsewhere. This, of course, makes it less satisfactory to graft here than in States where the disease is mainly confined to the smaller branches and there is good, healthy wood to work in. We shall have to do the best we can with this disease and wait for more experience to fully demonstrate what now seems so perplexing.

### Revival of Alfalfa.

TO THE EDITOR:—I have on my new ranch about ten acres of alfalfa which has been neglected for several years, and I would like some advice about getting a better stand. At present there is an average of one plant to every 14 inches. Would it be better to pulverize and resow, thus keeping the old plants, or would it be better to plow the whole thing up and plant new in the spring? I am a little green on alfalfa, but have killed the gophers, and think with a little advice from you will be on the road to success.—H. O., Jr., St. Helena.

We should see first what we could do in the way of improvement before breaking up and resowing. If you have killed the gophers you have taken a long step in the direction of restoration. The next thing to do is to start in after the heavy winter rains are over, say in the latter part of February or March in your section, and give the alfalfa a good disking, using sharp disks set at as great an angle as possible. A good disk harrow with 16-inch disks is suitable for this work. After disking one way cross-disk the patch. This should give a very thorough pulverizing of the surface and will not hurt the alfalfa stools. After such treatment good growth starts and the side shoots will give you a good stand. If it seems rather scant of plants you can scatter a little seed before the cross-disking. As the disks are set wide the penetration is slight and the seed not likely to be covered too deeply. If you wish to combine seeding with disking the whole operation should be done later than we have mentioned if the alfalfa is in a low, frosty place.

### Testing Soils.

TO THE EDITOR:—Have you a book on the testing of soils or can you tell where I can get one?—NEW SUBSCRIBER, Rocklin.

There are descriptive books on soils like that by Prof. King of Wisconsin which yields much valuable and interesting information concerning the origin and nature of soils. We can send that for 75 cents. Prof. Hilgard of the University of California now has in preparation a more detailed work, which we hope will be published soon. There are also books on



chemical analysis of soils, but they are only useful as desk books for teachers and students in agricultural chemistry. Testing soils, or ascertaining the chemical composition thereof, cannot be popularized. It is too elaborate to be attempted except by those who have pursued advanced chemical studies and have the advantages of fully equipped laboratories. No other one, then, can test soils in this way. The only popular test of a soil is to observe the natural vegetation which it supports or to try to grow something on it.

#### Treatment of Old Vines.

TO THE EDITOR:—We have some very old Mission vines on which the bark has become very long and thick. I intend to spray them with Bordeaux. Would it do any harm to take off this outer bark before spraying? My reason for spraying is that they are not quite as strong as they were. I also intend to fertilize them with stable manure. Is this right?—VINE GROWER.

There would be no harm in removing some of the old loose bark on the vine stumps, but it is doubtful whether it would pay for the expense. It would, however, of course, facilitate the approach of the Bordeaux to any resting spores that there might be in this scaly bark, and, to that extent, might be worth the effort; but we would be very careful about removing too much, because it would render the inner bark liable to sunburn, and in this way the vine might be seriously injured. The outer bark is to a certain extent protective, and we should not interfere with it except for very clear advantage. The invigorating action of the Bordeaux mixture is believed to be exerted by its contact with the leaves, although it undoubtedly has an effect also upon the bark by killing all fungus growth upon it when such exists.

The application of stable manure would be desirable in invigorating the vines, but one has to be very careful, if growing grapes for high class wines, about the application of stable manure, because it is apt to act injuriously upon the flavor. If you are growing table grapes, in which size and appearance are the main points, this difficulty would not arise, and for common wines we doubt if objection would be made. Irrespective of these considerations, we would certainly manure the vineyard well for the purpose of adding fresh vigor to the growth, if such was needed.

#### Fertilizers on the Ground Surface.

TO THE EDITOR:—How long can nitrate of soda, muriate of potash and Thomas' phosphate lay upon ground without losing fertilizing qualities before plowing under, either on bare ground or in weeds?—SUBSCRIBER, Berryessa.

None of them are liable to loss by exposure to the atmosphere. Nitrate of soda and muriate of potash are liable to loss by heavy rains which may cause movement of water over the surface, for as they are readily soluble they will go with the water. Nitrate of soda is also liable to loss by leaching through the soil with the water which escapes that way, but the potash, though dissolved in water, does not pass out to any extent in the drainage because it combines with other matters in the soil. Thomas' phosphate powder is not appreciably affected because it is very slow in dissolving. How long any or all of these can lie unhurt upon the surface depends upon the action of water (and this upon the rainfall) upon the lay of the land and upon the coarseness of the soil. It is not safe to expose the nitrate of soda to such dangers nor to plow it in too early where rainfall is heavy; the other substances not being subject to such losses, are not materially affected by delay in plowing.

#### Leaf Spot Fungus on Navel Orange.

TO THE EDITOR:—Among a number of the ten-year-old Navel orange trees growing about the house, all of which are well laden with fruit, is one afflicted with a blight, for the eradication of which I will be glad if you prescribe a remedy. Sample leaves are herewith enclosed for your inspection. The fruit on this particular tree is greener than that upon the other trees, but of equal or greater size.—READER, Solano county.

The orange leaves show the presence of the fungus known as *Sphaerella gibelliana*. This is one of the leaf spot fungi working something as does the shot-hole fungus of the apricot, and must be checked if it should show a tendency to become abundant, because the tree can not perform its proper duty with leaves affected in this way. It is, perhaps, too late to do

anything for it this year, but as soon as the trouble can be seen to begin by close examination of the younger leaves in the spring or early summer an application of the Bordeaux mixture or of the ammonia copper carbonate would check its spread. The latter is preferable because it does not discolor the leaves as the Bordeaux mixture will.

#### Kerosene Emulsion for San Jose Scale.

TO THE EDITOR:—Can I kill San Jose scale with kerosene emulsion? It is difficult to get lime up here in the mountains, or I would use the lime, salt and sulphur spray. Should I spray all the trees or only the ones seen to be badly affected?—ORCHARDIST, Humboldt county.

You can do very satisfactory work with kerosene emulsion for the San Jose scale if you make thorough application while the leaves are off with the winter strength of emulsion. This strength is secured by thoroughly emulsifying 3 gallons of kerosene with 1½ gallons of sour milk or 1½ gallons of water in which ¼ pound of common laundry soap has been dissolved. When this has been pumped back into itself until a good emulsion appears, stir it all into twenty gallons of water. This is twice the summer strength, which is made with 40 gallons of water. Use plenty of soap if you can afford it. It adds much to the efficiency of the spray. It will not hurt if you use twelve times as much soap as specified above.

Of course, if you are sure that only certain trees are affected, it would not be necessary to spray all the trees in the orchard; but it is almost impossible to get such assurance. It would probably be a good investment to spray the whole orchard thoroughly in case there may be colonies here and there, which you do not notice.

#### Olive Propagation.

TO THE EDITOR:—What can I expect from lower branches of olive trees turned down in the dirt to root while still attached to the mother tree? I turned them down into ditches and covered about 6 inches deep with the tips protruding. Will olives so rooted be ready for field planting earlier than by other methods?—AMATEUR, San Bernardino.

There will be no difficulty about your olive layers rooting, providing moisture enough remains near the surface. This method is not usually employed because of the amount of labor in layering the branches and because it interferes with proper cultivation of the ground. One common method is to use small herbaceous tips in sand in the greenhouse, or hardwood cuttings, large as your finger and a foot long planted in open ground, buried two-thirds of their length below the surface and placed in rows convenient for cultivation and irrigation. It will be a question whether your layering would be any more expeditious than the cutting method.

#### Killing Nut Sedge in Orchard.

TO THE EDITOR:—Can you tell me through the medium of your ever welcome paper the best means of eradicating grass known as "nut sedge." I have been told that if the part of the orchard affected is fenced in and a hog turned loose he will soon get rid of it by rooting up and eating the nuts or bulbs.—SEVEN-YEAR SUBSCRIBER, Newcastle.

The hog is a good tool for this work. We do not know a better. He will make a better job than he does with morning glory because the multiplication is by bulblets rather than by string-like roots. The hog will work faster if you give him the advantage of a good plowing of the land to loosen up the ground. You will have to watch, for if the nuts are scarce and you do not give him other feed he may take to the tree bark. Nut sedge can be killed like morning glory by never letting a shoot reach the light, but the hog remedy is easier.

#### Young Orange Trees.

TO THE EDITOR:—I wish to plant an orange orchard next winter and have a small piece of ground now that is suitable for such trees. Would it be safe or advisable to buy budded trees (½ inch) now and place them in nursery rows until next season? Would they be any more likely to suffer from such treatment than seedling trees?—E. H. MAY, Poplar.

It is certainly safe to buy budded trees which have growth a half inch thick on the bud and to plant them out in nursery for another year, if they are well cared for in the nursery. Budded trees which have a good growth on the bud are not likely to suffer more in transplanting than seedling trees.

#### Crimson Winter Rhubarb.

TO THE EDITOR:—Will you ask readers who have the Crimson Winter rhubarb introduced last year whether they have had any difficulty about its seedling. We hoped to get seed to increase acreage, but none appeared last summer.—READER, Los Angeles.

We have not heard of the difficulty spoken of. What have others observed? If the plants were not well rooted or conditions were not very favorable, seed could hardly be expected until the plants were well established.

#### Sugar Prune on Tragedy.

TO THE EDITOR:—Will the Sugar prune do to work on the Tragedy?—READER.

Yes; the Sugar prune is proving very free in taking and growing on all varieties of its own class so far as we know. If any reader scores an exception we would like to know it.

## WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending January 20, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

#### SACRAMENTO VALLEY.

Favorable weather conditions have prevailed during the week, with light rain at the close, and crop prospects are very good. Grain has made slow but healthy growth, and is in excellent condition. Rain was beneficial to grain, pasturage and orchards, though not really needed at present, as the soil had sufficient moisture. There will be a full crop of wheat and barley if conditions continue favorable. Green feed is plentiful, and stock are doing well. Work in orchards and vineyards is progressing. Fruit prospects are excellent. Almond buds are swelling.

#### COAST AND BAY SECTIONS.

Rain at the close of the week extended through all sections, greatly benefiting grain and feed, particularly in the southern coast counties, where farmers will now resume plowing and seeding. In the central and northern districts grain is in very good condition, though making slow growth. In the southern counties some injury has resulted from the long continued dry weather, especially in the districts where fogs have not prevailed; prospects for crops have undoubtedly been much improved by the rain, and green feed will become more plentiful. Orchards and vineyards continue in good condition, and prospects are excellent for a heavy yield of fruit.

#### SAN JOAQUIN VALLEY.

The weather has continued cold, cloudy and foggy during the week, with frequent frosts. Light showers fell in portions of the valley Saturday night and Sunday, benefiting grain and pasturage to some extent. Grain is in fair condition except in the southern districts, but is making slow growth owing to cold weather. Green feed is plentiful in most sections, and stock are in good condition. Plowing and seeding continue. There is some prospect that the grain acreage will be less than last season's and the yield unsatisfactory. Orchards and vineyards are in excellent condition, and fruit prospects are good.

#### SOUTHERN CALIFORNIA.

The weather has been partly cloudy and foggy along the coast, and generally warm and clear in the interior. Light frosts have occurred in some sections. The rainfall on Sunday will be of great benefit to all crops, and in some places will enable farmers to resume plowing and seeding; if followed by more rain soon there will be a fair crop of grain. Irrigation water is still plentiful in most places, and is being freely used. Sugar beet planting has commenced at Santa Maria. Pasturage has become very scarce, but will be revived by the rain. Orange shipments continue. Late frosts have severely damaged oranges in some sections.

EUREKA SUMMARY.—Comparatively little rain has fallen since January 1st. Grain and pasturage are doing well. Plowing, seeding and pruning are progressing. But little snow in the mountains.

LOS ANGELES SUMMARY.—Cool, dry weather, with occasional frost, without damage, was followed Saturday night and Sunday morning by rain too light to be of much benefit in valleys, but quite heavy in mountains.

#### Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, January 22, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week...	Minimum Temperature for the Week...
Eureka.....	.82	16.16	30.41	24.29	56	36
Red Bluff.....	.44	10.80	15.41	14.71	53	36
San Francisco.....	.18	6.51	11.32	10.89	58	36
San Francisco.....	.66	6.60	13.01	14.26	56	44
Fresno.....	.01	3.26	7.22	8.00	60	34
Independence.....	.00	1.38	5.12	4.42	62	22
San Luis Obispo.....	.42	5.32	21.09	10.74	68	32
Los Angeles.....	.10	2.70	8.23	10.83	72	40
San Diego.....	.00	1.70	3.19	4.83	66	44
Yuma.....	.00	.22	.02	2.07	78	38



## HORTICULTURE.

### Orange Growing in Southern California.

From a paper read by J. W. JEFFREY, Horticultural Commissioner Los Angeles County, at the Fruit Growers' Convention.

The total output of oranges for southern California in 1901 was 21,175 carloads. The world has never before witnessed the concentration of so much capital, energy and enterprise upon a equal area of agricultural lands in the space of our decade as that lavished with so much success upon the citrus territory of southern California. Ten years ago the orange industry was fairly in its experimental stage; ten years ago began the great increase in population that gave to Los Angeles City front rank in percentage of gain of all the important cities of this country, and to every citrus growing center a population far outstripping Los Angeles in percentage of gain, though not appearing in the returns from lack of data with which to make comparison. It is more than coincident that these developments of soil and population should mark time together. The former could not proceed without the latter, in the orange business, for it required increased labor to maintain the intense cultivation and harvest the product that produced this record. The orange should be recognized, then, as the cardinal factor in the development of southern California from the census enumerator's standpoint.

Were it not for the use of modern methods of irrigation, economy in the use of machinery in cultivation, and labor saving appliances in preparing the crops for marketing, the orange growing centers would present a duplicate of the Netherlands in the rural population necessary to produce and care for the present fruit tonnage. I have known one acre of orange trees to produce 70,000 pounds of merchantable fruit at one picking. No cultivated crop that I have seen is equal to that of a thoroughly cared for orchard of Washington Navel oranges. Twenty thousand pounds of corn and potatoes, grown at the same time upon an acre of drained peat lands at El Monte, is far below the mark. Without presenting too many facts that might require verification after adjournment, we will agree that the Navel orange tree is the most magnificent feeder and producer, except the pomelo, of any orchard tree. Consequently it requires a proportionate amount of labor to supply the food, keep the tree in health, and care for the products.

**A CONTRAST.**—My home is in the midst of an irrigation district of nearly 4000 acres of bearing orange trees. On the south and breaking away from it like a step down from a great green wall is a tract of 4000 acres of fine wheat land farmed by one rancher. By the use of a modern traction engine this farmer expects to cultivate, seed and harvest and thresh the cereal crop of this tract, requiring the labor of four men annually to do the work. A ten-acre orange grove requires the constant labor of one man to irrigate, cultivate, harvest and pack the crop that is produced every year. Thus the complement of the 4000-acre tract of orange trees is 400 men, as against four for the farm tract of equal area. As the southern orange grower has taken the contract to sell his own fruit in co-operation with his associates and makes big money by attending to this business, as well as that of growing the fruit, it is safe to say that 600 helpers are required in all the departments of the business to care for the 4000 acres of orange groves in question. From this typical example of industrial California, and its contrast with plain farming one may understand the principal cause of the progress southern California has made in population and wealth during the last decade.

**VARIETIES.**—Without giving up my attempt to sketch the latest experiences in orange culture, it may be stated that the south has practically settled upon two varieties as the standards for general cultivation. The first in importance is the Washington Navel. Public sentiment, both from the growers' and consumers' standpoint, has always given this orange the preference. The tendency of this variety to sport back to worthlessness, and the consequent mistakes of the early propagators in their selection of stock from which to grow trees are the only valid arguments that have ever been used against the general adoption of this orange. Later years have shown that a typical tree once established will always remain so and that has thrown the burden of purity upon the nurserymen. Planters understand this so thoroughly that they now spend more time in the selection of their nurserymen than formerly, and the younger orchards are coming to maturity with a minimum of sports and in many cases a full complement of typical trees. Tens of thousands of dollars have been spent in budding over off-quality Washington Navel trees, but the progress of to-day recognizes very little necessity of starting an orchard subject to this fault. Perhaps these weaknesses in this variety have caused its utter failure in Florida, and this may be another case of compensation. At least

it is not a cause of anxiety upon the part of California growers.

The other standard orange is the Valencia Late, a somewhat seeded variety and hence not subject to the inconstancy of the Navel and rarely, if ever, missing in typical quality through the faults of the parent tree. This orange, in a few localities, vies with the Navel for supremacy of acreage, but generally is of small importance in the crop totals. It is not prepossessing in color, it is uniform in quality, size and productiveness, and could it be shipped skinless would sell better upon its color, texture and solidity.

I shall not mention other varieties except to state that most of them have gradually lost consideration at the hands of the grower. Some progress has been made in the cultivation of the Tangerines, and in a few cases it has been very profitable. The other varieties of the Mandarin type are yet in their experimental stage and cannot be ranked among the profitable kinds. The pomelo, the largest and most prolific of all the oranges, is halting at present, with good prospects of becoming a perpetuity in the ordinary run of the business.

**PLANTING.**—The stock now being planted is almost universally first-class. The mistakes made in planting scrub trees were in evidence years ago, and the lesson has been so impressed upon the orchardists that the nurserymen seldom advertise or attempt to sell poor trees. There is nothing new in the practice of preparing the ground for trees. Experience has shown that the land must be graded with special reference to its irrigation. There are many misfit orchards among the oldest plantations in this respect, entailing great loss in the congestion of fertilizers, inequalities in irrigation, and impossible irrigation in some cases. The intelligent planter no longer prepares his land improperly or by fixed rule, but proportions his grade as far as possible to the character of his soil and the methods of irrigation he wishes to use.

**LAYING OUT.**—I need not describe the different plans of orchard formation. The square, the five square and the triangular each has its advocates, but since the orange has been found such a ravenous feeder that its roots soon ramify its feeding ground entire, we hear little of the arrangement of the trees but much of the planting distances. Aside from the fact that square formation has the advantage of all others in economy of cultivation, especially in alluvial soil where the ground near the trees does not need cultivation, it has been found advantageous from the fumigator's standpoint. There is nothing more bothersome to the tent men upon a dark night than to keep tab upon every tree in a five square or triangular arrangement. As to sub-soiling, that is not practiced extensively of wet years and may be superseded altogether by the orchard plow. At any rate the square method allows sufficient room for the subsoiler, even far more than one furrow, which gives the same results as is claimed from the other systems of planting. Plant in squares 20 feet across if your land is not strong, 22 by 24 feet where the soil is heavy and the tree growth abundant. Many orchardists who planted 18 by 20 feet are reaping the benefit of their folly by hauling the fruit out on narrow sleds, and southern California is not an ideal locality for sledding. It is impossible to fumigate many of the old orchards because of the interlocking of the branches, and the error of close planting will hereafter be avoided for this and other reasons too well known to require notice. On the experience that the greater feeding area a tree is given, the less its liability to dangerous fluctuations in vitality and consequent effects upon the quality of the fruit, the average planter would advise 22 by 24 feet as the proper distance to plant, both from the economics of orchard work and the quality of merchantable fruit produced.

**CULTIVATION.**—There is something new in cultivation. Last year southern California grew the largest and the least resistant crop of oranges yet produced. Among the other reasons given for this is shallow cultivation, and following, shallow irrigation. In the wake of these extremely dry seasons came a persistent hardpan, even in alluvial soil. This produced a tendency to strangulation of the deeper roots and a consequent activity of the surface feeders. These surface roots were fed the fertilizers the whole root should have had, and, being constantly stimulated by irrigation, constantly stirred to hardpan by the teeth of the cultivator and scalded by the hot sun, the functions of the entire tree were in a state of unrest, and gradual impotency. It is impossible that this constant arresting and forcing of the development of the fruit caused the sweetening of the pulp observed in October, the lack of oil formation in the skin cells and the non-union of the rind and pulp—all so noticeable in last season's crop. At any rate, as soon as the 20-inch rainfall of last winter penetrated the hardpan the trees resumed their normal functions with old-time vigor, and now it is a laborious process to separate the rind from even a ripe orange, and impossible to find an abnormal crop. These points may be thought somewhat theoretical, but they have brought conviction to a large number of practical men, who will hereafter, in the event of a dry, hot season use the orchard plow to train the tree roots down to a safer feeding surface by pre-

venting the formation of a dustpan. In spite of the adversities of last season, I know several cases of deep plowing which held the fruit intact until May, while many in the same locality were compelled to harvest their crops in early winter where shallow cultivation had prevailed. If the experiences of the past three years have demonstrated that dry-year crops may be improved by superior cultivation a repetition of the calamity that befell the orange grower last season might be avoided.

**PRUNING.**—In the pruning of orange trees there is no new item to present. Elaborate articles have been written on this point, but the practical orchardist does little or no pruning. To look after the sprouts that may destroy his trees, and to trim out the branches that die of inanition and thus give the tree an inside bearing surface, are about the limit of orange tree pruning as practiced by the best growers. The orange tree will produce fancy fruit grown so near the earth that it may ripen in the sand, and indeed the best fruit is usually found the lower branches.

**SOILS AND FERTILIZERS.**—The question of adaptability of soil is no longer an open one. It has been settled by experiences so thoroughly that the new investor can avoid mistakes by making a tour of investigation. Generally, lands which bear light, regular crops produce a somewhat superior orange, while the heavier lands produce a slightly inferior fruit but heavier crops. Modern methods of fertilizing have modified these characteristics till it may be broadly stated that there is only an immaterial difference in the fruit grown throughout the true citrus belt. A problem in regard to fertilization presents itself this season for the first time. The facts are that hundreds of groves where hardpanning had occurred for two or three years carried the annual or semi-annual applications of fertilizer to the beginning of this year with but partial assimilation. The light rainfall, the sparse irrigation and other deficiencies of three consecutive dry years, together with the light cultivation, must have prevented the utilization of the fertilizers. This has brought a strange experience—the finest of trees ever seen with the lightest crop ever grown from an equal foliage surface. The conclusion is that the trees last winter were supplied with a superabundance of wood growing but not sufficient fruit producing elements. There is a field for investigation here that the scientific authorities should exploit.

**PESTS.**—The question of insect disinfection is too large to cover a paper of this character. In a majority of the citrus growing sections unclean fruit bears its own penalty in washing charges, in falling to lower grades and in the dispute it brings to the orchardist.

Fumigation is more universal this fall than at any other time. It has been reduced to science, and while the practice is not always successful, poor work is no longer tolerated without penalty upon the fumigator. There is little complaint of impure cyanide, but much of its improper applications. Daylight applications, or more properly, warm weather fumigation, is under ban, but a few otherwise practical growers have not discovered it. Two or three of the leading citrus counties do this work at the treasury's expense, afterwards collecting from the lands treated. Los Angeles still requires the orchardists to do their own fumigation. No new scale pests have developed since your last reports were out, nor is there evidence that parasites have taken the contract to disinfect the orchards of southern California.

**MARKETING.**—Upon the question of marketing you have heard a greater voice than mine, one that has been heard all along this coast and its influence felt. [See address of A. H. Naftzger in PACIFIC RURAL PRESS of Jan. 4.] It is not boasting to say that southern California has set the pace for co-operative effort among all farming communities. Great as the actual achievements in this line have been, greater is the feeling of permanent security that has been engendered by the success of the Citrus Fruit Exchange. Were it not for the work of this co-operative institution, there would be no breadth nor vitality to my subject to-night. The Association has given to the agricultural world its greatest example of the elimination of the unnecessary elements of a great industry without the formation of a trust. It has increased the profits of the producer without taxing the consumer to do it. The manipulator, speculator, and even the honest but depleting fruit merchants, have been apportioned to 30% or 40% of the orange crop. They hold on to that through a strenuous endeavor that would appall even our great President. The idea of charging producers just what it costs to sell their fruits has unified the policy of 4000 orange growers and made the Southern California Fruit Exchange the greatest fruit merchant the world has ever seen, giving that organization the record of handling millions of dollars every year, with losses from collections and disbursements so small that they do not amount to the value of fifteen carloads in an aggregate sale of 28,500 made since the exchange assumed control of its own fruit from the orchard to the market end of the line. The orange in northern California is feeling the impulse of this great movement, and may soon be listed with the Exchange.



## FRUIT MARKETING.

### Distribution of California Canned and Dried Fruits.

By ISIDOR JACOBS of San Francisco, at the Fruit Growers' Convention.

The proper distribution of California canned and dried fruits in the various markets of the world depends very largely on demand, methods, men, tariffs, quality and transportation. All of these are the result of concentration of thought and effort, and are dependent on the man or men employed. Much, too, depends upon the opening up of new markets and new customers for our products—keeping those markets we already have and increasing the trade wherever possible.

**METHODS.**—The distribution of goods must be confined to men who can concentrate their thoughts on the proper disposal of goods for the best interests of the manufacturer in canned fruits and the best interests of the producer in the sale of dried fruits, including raisins. The avenue chosen for the disposal of California canned and dried fruits should be entirely free from speculation of any kind or nature. A commission dealer interested in the articles he handles, or similar articles, excepting so far as relates to his commission, can not do justice to his principal, no matter how good his intentions might be. The men chosen to handle this most important part of the work must be free from any entanglements that will prevent their doing their very best for their principals.

Manipulation in these lines by parties who are expected to look after the distribution of the products is largely responsible for the conditions existing, and until both canned fruits and dried fruits are handled in the most direct way the business will never be the success that it should be, or on a firm and solid footing. In canned fruits, with ample capital, any amount of these goods can be manufactured, and they should be packed with the greatest possible care as to quality and grading; but the most important thing is to dispose of them at a profit to the manufacturer and in a way to accomplish the best results with a view toward increasing the trade. This requires effort and concentrated thought, and the failure to dispose of the goods promptly and on a profitable basis causes the lack of success.

**MAINTAINING QUALITY.**—Quality and grading aid materially in the disposal of these goods; but, unless the quality is maintained, the trade will drift away very quickly. To make a complete success of the fruit canning trade the goods should be disposed of by men who can devote their thoughts to the disposal of the goods on the most direct basis; and, at the same time, to maintain undisturbed amicable relations between the principals and their customers. In order to succeed in this, good faith must be exercised on both sides, and it is injudicious and injurious to the future of the trade if the quality is not maintained, or the markets are overloaded to the detriment of the trade, resulting in dissatisfaction to buyers, and thus injuring future prospects of the seller.

In dried fruits, particularly raisins and prunes, the same rule will apply. The difficulty in these lines seems to be almost entirely in the methods of the disposal of the crops. The crops are ample, but they are not distributed and sold as fast as they should be. The cause of the difficulty is in the distribution and sale. The opening up of new markets and the securing of new customers will not keep pace with the increasing production. The difficulty is not overproduction, but, rather, underconsumption. Many of the producers, instead of standing together, are allowing themselves to continually come under influences that are diametrically opposed to their best interests. If they could only look at this matter from the standpoint of what is best for all concerned, their efforts would result in success.

**CAUSES OF FAILURE.**—Present conditions in the disposal of these products have been brought about by the fear of active competition of commission merchants (so-called), who are not only commission merchants, but also brokers, dealers, speculators and, in many instances, packers.

One of the causes of lack of success is handling goods through agents who are interested in other lines of products, for they are bound to devote their attention to those goods which are easiest disposed of, and on which, therefore, they can easiest earn their brokerage and commission, to the consequent neglect of other lines which require discrimination and push to dispose of them. Systematic methods of advertising and permanent exhibits will also have to be adopted, for the products must be brought in a more direct way to the attention of the consumers. The opening up of new markets in foreign lands is, of necessity, slow growth, and must be undertaken in a very careful way. The foreign trade is not worth cultivating unless it is to be a permanent one; therefore, the man or concern desiring to go into this market should see to it that, when once in the field, he has a sure prospect of remaining there. The main consideration is to supply a standard quality of goods. Strict honesty is absolutely essential. Everything

sold must be as represented. To send high-grade goods at the beginning and then let the quality drop is worse than folly. It is a good form of business suicide. The foreign buyer is generally a shrewd judge of values, and it is impossible to deceive him more than once. It is highly essential that the manufacturer and producer should not remain content with merely filling the orders that come in, but he should cultivate and enlarge the opportunities that are now his. When he is fairly established he may be reasonably sure of holding his trade, for the foreign customer is conservative and strong inducements must be offered him to induce a change when once he has formed a habit of buying certain grades and qualities.

**FRAUDULENT BRANDS.**—One of the causes that is preventing increase in the distribution of California canned fruits is the fact that a considerable percentage of inferior grades is turned out, bearing attractive labels with the word "California" on them. Consumers purchase these goods as California canned fruits, and finding them of poor quality and not knowing that the goods they used were below the average quality of California canned fruits, they stop using them, thus injuring the industry very materially. The remedy for this is to have fewer grades, and have the cans of seconds and inferior grades plainly stamped with the quality contained. It seems ridiculous and inconsistent for California canners to jealously guard the name "California" and to protect its use by enjoining Eastern packers from putting goods on the market bearing the name "California," while, at the same time, they are turning out goods, grading them as seconds and water, on which attractive labels are placed, with the word "California" prominently displayed, but no indication on the label of any inferiority of the goods contained therein. The strange thing about this is that on these inferior grades there is no margin of profit for the canner. These methods have already interfered with the natural increase in trade in these goods, and unless some steps are taken to remedy the evils resultant from this method, no considerable future increase in the distribution need be anticipated.

**TARIFFS.**—This is a subject that is allied very closely to the distribution of California canned and dried fruits, and in this regard there is a great variety of opinion—also a diversity of opinion. The distribution of California canned fruits would be materially increased in foreign countries if the tariff into those countries could be reasonably reduced. In Germany, France and in nearly all European countries, excepting England, the tariff is very high—in Germany, amounting to nearly 30 cents per can, which is more than the selling price of the goods—being almost prohibitory. The reduction in the tariff on dried fruits into Germany resulted in an enormous increase in the trade in California dried fruits. What was done with dried fruits could be done in canned fruits.

**RECIPROCITY.**—Even though we do not favor reciprocity treaties, why should we be so blind to our own interests as not to make united efforts to obtain some concessions in our favor, if it is to be the policy of the administration to adopt these treaties? We do know that in these reciprocity treaties the interests of great corporations are sufficiently strong to obtain favorable results. California is in these negotiations considered only as a small part of the country.

A committee of the Home Market Club of Boston recently reported as follows:

"Among the most gratifying condition of the times which are attended with so much prosperity at home is the fact that we have already extended our trade abroad and have secured so large a place in the markets of the world. The time is auspicious for continuing and completing the conquest. It must go on without delay, and must be thorough and permanent. To that end every step must be wise, successful, unretreating, and must obtain and command the confidence and approbation of the American people. We must injure no existing American industry. We respectfully ask Congress, therefore, to collect without delay from every available source full and exact information as to the effect of all proposed treaties upon industries now successfully established, so that none may be sacrificed, and in that way whatever may be accomplished shall be both beneficial and enduring."

**A CALIFORNIA BUREAU.**—For some years past it has been urged and advocated that a permanent California bureau at Washington, D. C., be established, so that a direct representative of this State would be in continual touch with the different national departments, particularly in the interim during one session of Congress and the other. Such a representative could not only insist that the interests of California should be protected in these reciprocity treaties, by asking for lower rates on such of our products and manufactures as could be benefited by them, but at the same time protect California's interests by seeing that the tariff is not reduced into this country on such articles on which low tariffs would tender to injure the sale of. Such a representative would gather valuable statistics, and be prepared at all times with the necessary arguments to show our requirements on both sides of the question.

At a recent meeting of the Chamber of Commerce

in this city, William M. Bunker was chosen as special representative to permanently represent the interests of the Chamber at Washington. No doubt he will look after reciprocity matters, questions of tariff, interstate commerce and other subjects of legislation so far as they affect the interests of the State.

**TRANSPORTATION.**—Not the least feature in the distribution of California canned and dried fruits depends on transportation facilities, and the future holds out brilliant promise in this regard. New lines of steamships, the promise of the Nicaragua canal and new lines of railroads mean new territory to be opened up. At the present time, it is hard to say what effect the amalgamation of the different lines of railroads may have on the future of this State's products. Certainly, such amalgamation ought to result in better facilities for moving the products to their markets, and it would almost seem that unity of interest should result in the manufacturer and producer seeking new markets, and the transportation companies opening new and vast sections to the traders of this coast.

In this regard the interests of shippers and transportation companies are identical. The transportation companies should name such rates as will result in opening up new markets for our packers and producers and enable them to hold those markets that they already have. They must also recognize the necessity for more rapid transit of the products to market, and in every way possible improve general transportation facilities.

A factor that may be relied upon to help enlarge our trade abroad is the tendency that is showing itself in the way of restoring our supremacy as a nation of shipowners. It is undoubtedly true that trade follows the flag. Even though it is shown that the establishment of foreign trade does not depend necessarily upon carrying goods in our own vessels, still it is undoubtedly true that the flag helps materially.

New transportation facilities to Vladivostok and the vast Asiatic Siberian country will afford us in the near future great possibilities in the way of distribution of our products.

**MEN WANTED.**—Methods in the successful distribution of California canned and dried fruits depend largely on the men who adopt them. Only men of the widest experience and energetic force should be chosen, and at the head of each enterprise should be one man, who can sit quietly in his office and devise the proper methods and see that they are properly carried out by those chosen to do the work. He must not be under the influence of excitement, or other disadvantageous circumstances, but be able to consider carefully the methods necessary to make a complete success of the enterprise.

Dr. Thwing, president of the Western Reserve College of Ohio, in a lecture delivered in this city some months ago, said that Mr. Rockefeller told him that one of his greatest difficulties was to find men to whom he could pay \$25,000 per year salary to do some of his thinking for him.

Men are required who can accomplish something—men of force, men with concentrated energy—men who have a definite purpose, and who know how to execute it with their entire strength. The need is for men who can produce results—men possessing tact, practical ability and executive force.

The men who keep abreast of the ever-increasing tide of progress in trade must not rest satisfied with the business methods that brought success years ago. They must keep their business up to the standard by the constant infusion of new ideas and improved methods. No man can afford to rest content with bringing his business up to a certain point—he must ever be reaching out beyond that point.

**CONCLUSION.**—In reference to the causes that prevent the natural increase in consumption and distribution of California canned fruits, it appears that the responsibility rests on the fruit canners themselves by the pursuing of a short-sighted policy, which is resulting in holding the business in check and retarding an industry which should progress and increase throughout the world. Strict honesty to the consumer can alone accomplish this object. Either inferior grades should not be put out at all under a label bearing the word "California," or the label should state exactly the quality of the goods, so that the purchasers may know what they are buying and the consumers what they are getting.

California canned fruits in former years acquired their great reputation throughout the world entirely because the quality turned out under the name "California" was superior and in heavy syrup. This has been changed by the methods adopted in late years, and to-day considerable goods are turned out under the name "California" that will rank inferior to many Eastern packs, and this is destroying with many consumers the prestige and popularity that California canned fruits formerly enjoyed in the world's various markets.

In raisins and dried fruits the distribution must be carried on in the most direct way without fear of antagonizing any of the elements that stand in the way of progress and increase of trade. The prune and raisin growers must not be discouraged at their present seeming failures to make a success of their associations. If we examine the paths of almost any business success we will find it paved with failures; in fact, in many cases, failures have been the guides



that pointed the way to success. The lessons they taught, the suggestions they gave, showed the way to win.

### The Current Orange Crop at the South.

The following summary of the orange crop is made by the Los Angeles Express:

Southern California will ship a total of 20,000 cars of citrus fruit during the present season. The new crop is expected to fall short more than 4000 cars of the output last year. The estimated shipment of vegetables will aggregate 2000 cars. The figures quoted were gathered by the transcontinental railroad companies with headquarters in Los Angeles, and are considered reliable.

Frost has not damaged oranges up to this time, but the new crop of summer lemons will be short. The sandstorm two weeks ago shook from the trees a large amount of the new fruit, the damage from this source having been most serious in the vicinity of Colton, Rialto, Cucamonga and Santa Ana. The new crop is of a superior quality, and the acreage this year is the largest in the history of the industry in this section. Oranges this year are smaller in size, a fact to which nearly all of the shortage is stated to be due.

Present shipments average ninety cars a day. Last season the total shipments aggregated 24,531 cars of citrus fruits and 1948 cars of vegetables.

Present prices are considered fairly high, with indications for an excellent market. The railway companies profess to have the situation well in hand, with ample facilities for moving the fruit to its destination.

Shipments of the late crop to Saturday aggregated 3233 cars, as against 3299 cars for the same time last year.

The crop of new southern California products is expected to bring about \$12,000,000, of which sum the Santa Fe and Southern Pacific will divide about one-half between them. The figures include citrus and deciduous fruits, vegetables and walnuts.

## THE DAIRY.

### Profit in Maintaining the Milk Flow.

It will pay to keep up the flow of milk, even though feed is high. The Kansas Experiment Station shows that sixteen and one-half pounds of wheat straw and four pounds of ground wheat per day will maintain an average cow. How much more feed it will require to obtain a good flow of milk has been the subject of investigation at the same station. Three cows representing a fair average of Kansas milch cows were fed wheat straw, ground wheat and cottonseed meal. The cows were accustomed to the cottonseed meal gradually by starting with one-half pound and increasing a quarter of a pound daily until the maximum of four pounds per day per head was reached. This transition period required fourteen days. As these cows had been receiving sorghum pasture and alfalfa hay, they did not relish the straw at first and were allowed fifty-two pounds of alfalfa hay each during the transition period. The following figures give the results in the production of butter fat per cow:

	Per Day.
Previous to experiment, 30 days.....	.74 pound
During transition period, 14 days.....	.70 pound
During experiment, 30 days.....	.62 pound

The reduction of one-tenth pound in the daily production of butter fat is accounted for in the sudden change from succulent pasture to dry straw and the increase in the lactation period. After the cows were accustomed to the change the production of milk and butter fat was fairly uniform. During the thirty days under experiment these three cows consumed:

	Pounds.
Wheat straw.....	1,410
Ground wheat.....	590
Cottonseed meal.....	244½

According to experiments previously reported, these cows would consume as much or more straw and 360 pounds of wheat of the above grain as a maintenance ration. This leaves 230 pounds of ground wheat and 244½ pounds of cottonseed meal to be charged against the butter fat account. At \$1 per hundred for wheat and \$1.50 per hundred for cottonseed meal, this would amount to \$5.96. During this time these three cows produced 56.2 pounds of butter fat. At 17 cents per pound the financial account stands as follows:

Value of 56.2 pounds butter fat.....	\$9 55
Cost of feed.....	5 96
Total profit.....	3 59
Profit per cow.....	1 19

In the above account the skim milk is to pay for the hauling. With good management it will more than do this.

It will be noticed that this experiment represents an extreme case. Nearly every farmer has some corn or Kafir corn fodder, millet, sorghum hay, prairie hay, red clover, alfalfa, oat hay or even oat

straw that he can use instead or in place of part of the wheat straw with much better results. Any of these rough feeds will enable the dairyman to reduce the amount of grain needed. Where red clover or alfalfa is available little or no cottonseed meal is required.

By feeding his milch cows on a milk ration a farmer will not only save more money than he would to winter them on a maintenance ration, but he will keep his cows in the habit of giving milk (a very important point), will help to keep his creamery, skimming station and cheese factory operating on a paying basis, and will have his cows on hand as a profitable investment in the spring. If he then desires, he can dispose of any of his surplus stock at high prices.

### Qualification of the Creamery Operator.

By MR. GEORGE E. PEOPLES, at the recent Creamery Operators' Convention in San Francisco.

A man to make a successful creamery operator should, first of all, have a good business head. It is also well if he has had the advantages of a dairy school training, and is a practical bookkeeper. He then can, if at all bright, be trusted to finish the making of himself. If he has good sense he may escape the common error of self-made men—that of holding a very flattering opinion of his maker. If he stays his patrons will drill out of him any unnecessary conceit, or he soon finds it easy to move on to other fields.

Success largely consists in the conciliation of the patrons, and at the same time being resolute in resisting unjust demands. A good disposition is necessary. Like most of square pegs in square holes—the man who fills this position with success must have a natural aptitude. He should possess suavity and yet know how to talk to the point without verbosity. It is only the story that the more practical ability there is in the man the more he is worth.

A creamery operator who has the interests of the creamery at heart should try to make the patrons think, and to impart some of his knowledge on dairy matters, for by so doing he makes them prosperous and also educates them to appreciate his honest intelligent work. There are gentle ways of arousing such interest by getting them to read dairy papers and books pertaining to their business. I have found it a good plan to post in the creamery a monthly statement of the amount of milk and butter fat produced by each patron. No one must be overlooked and no one made a pet of. By being accommodating and granting favors when possible will soon bring respect. We do not know of any position that presents more difficulties, for the responsibility is great, and yet the one carrying it has to meet calmly all sorts of patrons, from the miserly overreaching man to the reckless one who knows it all, and also the one who virtuously takes out some of the cream of his milk and cannot be made to understand how it is that neighbor Jones' cows give richer milk, for when he tests the milk he keeps at home it is far richer than the operator's test.

One of the needs of the creamery operator is a better understanding of the commercial spirit of to-day as one of combination and not of competition, that is ruinous to the creamery. On all sides we find foolish operators paying higher prices for butter fat than the market warrants, because they are trying to run out some other creamery. It is better to follow the rest of the world and consolidate interests, even if some of the creameries are closed. It is just this failure to comprehend that makes us contend that while a dairy school education may be necessary for a creamery operator it is only a beginning. He must fit himself by a training in a good working creamery and a careful study of market conditions, being always ready to advance small consignments to new markets, and yet holding a permanent market for his goods founded on their quality where he is sure of his sales.

## THE VETERINARIAN.

### Possible Need of Lifting the Quarantine Line.

"I have just completed a trip through the cattle districts of the lower portion of the State and I find a very serious condition of affairs," said Dr. Chas. H. Blemer, State Veterinarian, to the Record-Union. "In fact, unless rain falls very quickly, all of the cattle in that section, with but very few exceptions, will have to be removed from their range or starve to death.

"The cause of this state of affairs is the fact that there has been absolutely no rainfall, and in consequence there is no feed for the stock. I consider the situation so serious that I have forwarded the following letter to Dr. D. E. Salmon, Chief of the Bureau of Animal Industry of the United States, and am anxiously awaiting an answer. The letter is as follows:

"Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, Washington, D. C.—Dear Sir: I have just completed a trip through that territory of California lying south of the Sacramento river and find that unless they have rain in a very short time, it will, in order to

save the lives of the live stock, be necessary to move them in a more rain-favored country.

"There is practically no feed in the above mentioned district, and the cattle holdings are stocked to their full capacity, many thousands of New Mexican, Mexican and Arizona cattle having been imported during the past year or two.

"I sincerely trust that should our fears be realized, that your department will see fit to permit the southern cattle of California to be moved to points north and above the Federal quarantine line, provided they pass the necessary inspection, and without unnecessary delay.

"This matter has been called to the attention of the Southern Pacific Railroad freight department, and I am just in receipt of a communication addressed to you by G. W. Luce.

"Trusting that this matter will receive your full consideration, I am yours respectfully,

"CHARLES H. BLEMER, State Veterinarian."

"In the eastern portions of Merced and Mariposa counties where there has been a little rainfall the conditions are not so strained, and in the portions where alfalfa can be raised by irrigation the people will be able to hold their cattle, but these districts are very limited.

"The main suffering will be among the range owners, who have loaded up unusual numbers of cattle. Everybody is hoping for rain and should it arrive the situation will be saved. If not the cattle will have to be transferred or die by starvation. At a rough estimate, I should judge that 500,000 head of cattle are involved."

AN ARIZONA COMMENT.—Dr. Blemer's comments obviously refer to the district south of the quarantine line, and that is only a part of California. It is interesting to read the following from the Arizona Stockman of Jan. 10, commenting upon drought reports and claiming that the California demand for Arizona cattle is at a standstill. Our Arizona exchange says:

"The above we believe is somewhat overdrawn. At least the demand for stock cattle for California ranges still continues, and it is difficult to find cattle to fill the demand. A California buyer in Tucson this week telegraphed a friend here asking where he could get good stock cattle. It is dry, it is true; so it is in Arizona, but the dangerous period is yet in the distance, and we are not given to borrowing trouble."

### Guarding Against Tuberculosis.

Prof. F. D. Chester of the Delaware Experiment Station translates from an address presented by Ed. Nocard of Alfort at a recent tuberculosis congress in Berlin the following paragraphs:

The report of Prof. Bollinger has shown you that bovine tuberculosis especially is on the increase, and in certain countries its progress is truly frightful. I wish only to remind you, for it is the basis of all prophylaxis, that the only true cause of the progress of bovine tuberculosis and of its perpetuation in infected stables is the contagion. Heredity plays only a slight part and is practically negligible. It is then against the contagion that it is necessary to be on the defensive. In short, it is sufficient to separate the diseased from the well. But to isolate the diseased it is necessary to be able to recognize them. Until recently nothing was more difficult than to diagnose tuberculosis except at an advanced period of the disease. It is not so to-day. Tuberculin permits us to recognize tuberculosis in cattle, even in its incipency, before there are any external evidences of the trouble. It is necessary then in an infected stable to make the separation between sound and diseased animals, and to effect an isolation which alone permits of the checking of the progress of the malady.

These facts enable us to formulate rules for the prevention of bovine tuberculosis: 1. In all stables where a tuberculous animal has been found all the other animals of the bovine species should be tested with tuberculin; and 2, the sound animals should then be isolated from the diseased and placed by themselves, either in a new or in a carefully disinfected stable. In the absence of a special stable, a single one can be divided into two compartments by a partition running to the roof. Each compartment should have its distinct entrance, tools, utensils and attendants. Or, in case the same attendants work in both places, the healthy should be cared for first, and the diseased afterward. Separate blouses and overalls should be worn in each place.

No animal should be admitted to the healthy stable until it is first tested with tuberculin. The calves born of tuberculous mothers may be placed in the healthy stable provided they be separated from their mothers immediately after birth and fed on boiled milk. After the complete separation of the tuberculosis animals, the sound ones should be tested every six months or a year with tuberculin. It is possible that some animals which failed to react to the first test may carry the germs of the disease without having developed lesions capable of causing a reaction, but which in the second test can be detected before they become dangerous to their neighbors.

As for the animals which react to tuberculin it will be necessary to make a clinical examination, and to divide them into two lots: First, those which present tuberculous symptoms, most frequently cough, enlargement or induration of the glands of the udder, stethoscopic signs, etc., should be made ready for the butcher at the best possible price; and second,



those which on the contrary present no external evidences of the disease, and these are happily the most numerous, even in the most infected stables, need not be slaughtered for the present at least. The majority of these animals possess only recent lesions, either but little extended or sometimes insignificant, their general condition being good. These are scarcely dangerous from the standpoint of contagion. They can therefore be kept and utilized for milk or for breeding purposes. The offspring of these cows are generally healthy and remain so; the only condition being that they should be immediately separated from the infected stable and fed on boiled milk. The animals recognized as tuberculous by the tuberculin reaction or otherwise should not be sold for a destination other than the butcher. They should be registered and marked. These measures are quite simple. They are moreover perfectly efficient provided they are accurately applied.

## Agricultural Review.

### ALAMEDA.

**BEET SUGAR OUTPUT AT ALVARADO.**—Niles Herald: The Alameda Sugar Company at Alvarado has completed the season's run and it has proved to be one of the best it has ever had. During the year just closed the mill has used about 67,000 tons of sugar beets and produced about 14,500,000 pounds of sugar. Taking cars of 30 tons capacity it would require over 2233 cars or 49 trains of 45 cars each and one of 28 to handle the beets alone. Then about 483 cars, or 10 trains of 45 cars and one of 33 cars to handle the manufactured product. The railroad company has received in round figures over \$75,000 as freight charges. The price of beets for several years has been \$4.50 per ton delivered at the mill and this item alone the past season has run over \$301,000. Next season the price will be \$4.75 per ton.

### BUTTE.

**BEES AND BLOSSOMS.**—Oroville Register: Walter Bell, who was down from Berry Creek recently, says the sun has been shining brightly up that way for the past week. In consequence of the warm and sunny weather there are tens of thousands of manzanita blossoms covering the hills and millions of bees feeding upon the blossoms.

**EARLY POTATOES.**—As an evidence of mild climate permits us to call attention to the fact that new potatoes were being dug in Oroville recently. They were of good size and quality. John O'Riordan, whose place is near the S. P. Co.'s depot, was digging the potatoes. As this is exact midwinter, this being the 15th of January, it is a good showing, even for a frostless region.

### FRESNO.

**RAISIN COMMITTEE OF FIFTEEN.**—Reedley Exponent: The committee of five, consisting of L. Einstein, J. H. La Rue, A. P. Jordan, H. Graff and D. C. Dunham, met to carry out the instructions of the recent meeting of raisin growers, which authorized it to appoint a committee of fifteen to take some action on the present raisin situation. The committee, as a result of its labors, gave out the following named gentlemen selected to compose the committee of fifteen: D. D. Allison, Temperance; G. P. Beveridge, Fresno; A. Erickson, Kingsburg; F. M. Helm, Fresno; W. B. Nichols, Dinuba; S. R. LaRue, Malaga; W. A. Long, Grangeville; P. McRae, Hanford; E. E. Manheim, Fresno; T. Nock, Oleander; A. L. Sayre, Madera; A. Sorenson, Easton; P. Talent, Hanford; Dr. Tre-fenkjan, Madison; A. V. Taylor, Hanford. The Board of Directors will do all in their power to aid the committee to bring their work to a successful arrangement for the growers.

**BEE KEEPERS MEET.**—The members of the California Bee Keepers' Association held their annual meeting in Selma on the 6th inst., and the following officers were elected for ensuing year: J. P. Johnston, president; John F. Crowder, first vice-president; B. D. Vanderburgh, second vice-president, and F. E. Wells, secretary and treasurer. Last year's crop of honey has all been disposed of and the business settled up. Some time was spent in discussing the validity of the Association's contracts, with the view of making them stronger. A committee consisting of J. P. Johnston and John F. Crowder was appointed to make arrangements to secure supplies for coming season.

### KINGS.

**COYOTES ARE THREATENING.**—Hanford Journal: Jacob Schwartz, who has

one of E. Jacob's ranches, located between here and Traver, says that coyotes are very destructive up his way. They are devouring poultry and pigs in large numbers and come right up to his house at night. Very few dogs will fight them, as the coyote is a scrapper and has a way of fighting which dogs do not care for more than one taste of. The coyotes will tackle a young calf, too, and unless their depredations are checked and the number of the brutes reduced in some way, there is no telling what they may do.

### LOS ANGELES.

**PRICE OF MILK ADVANCING.**—Los Angeles Record: Announcement was made yesterday morning that there is a threatened milk famine in this city and the dealers are very much worried. Many of them are now endeavoring to sell their dairies and routes can be obtained for a song. Many owners of small dairies are now anxious to get out of the milk business as they are running at a loss and the drivers who own routes cannot serve their customers, as milk is not available. The larger dairies who have large interests at stake, in order to steady their holdings and to prevent great financial loss, have decided to advance the price of milk 20%, or from 50 cents to 60 cents per can of three gallons. The direct cause of the shortage of milk is the dry weather and scarcity of food for the cows.

**GREAT PIGEON FARM.**—Exchange: Southern California has a great pigeon farm located a few miles from Los Angeles. It covers an area of eight acres and in the gigantic lofts are over 15,000 birds. The cost of feeding them amounts to little over \$5 per meal. The ranch was started three years ago with 2000 birds. Nearly 250 dozen squabs are disposed of per month, excepting in the fall, which is the moulting season. At that time of the year it is possible to secure only one-fourth of the usual number. When the ranch is well stocked, as it is when there are 15,000 birds flying about, the extensive family eats one wagon load of screenings, two sacks of wheat and about twelve gallons of boiled meal daily. In addition to this they are given three barrels of stale bread, soaked in water, during the week. A remarkable fact in connection with this place is that the pigeons never leave the ranch, and it is seldom that one ever gets beyond the large wire fence that surrounds the yard.

### MENDOCINO.

**BRINGING CATTLE AND SHEEP FROM NEVADA.**—Santa Rosa Press-Democrat: Sixteen carloads of stock cattle from Colonel Hardin's Nevada ranch arrived at Santa Rosa, en route to the Colonel's ranch in Mendocino county. Some cattle and sheep also arrived at the same time from Nevada for P. H. Noonan and Jack Sibbald.

### MONTEREY.

**CLOSE OF THE BEET SEASON.**—Salinas Index: The last beets of the 1901 crop have been delivered at Spreckels. This closes what is believed to be the most successful beet-growing and sugar-making campaign in this State. The total number of tons of beets sliced is 271,322 received from the following localities: From Salinas valley, 141,280 tons; Pajaro valley, 85,910 tons; San Benito county (principally San Juan valley), 27,620 tons; Santa Clara valley, 16,512 tons. Sixty-five thousand tons were raised on land in the immediate vicinity of the factory. The grand total of 271,322 tons at \$4.50 per ton—the price paid for the beets delivered at the factory—amounts to \$1,310,949, which has been distributed among the beet growers tributary to the Spreckels factory this season, those of the Salinas valley receiving over half the total amount, or \$535,760.

### PLACER.

**ORANGE SHIPMENTS.**—Newcastle News: Following is a close estimate of the amount of oranges shipped from this part of Placer county during the past season, and shows an increase over previous years: From Newcastle, by carload lots, 28 cars; by express, 391 boxes; by local freight shipments, 363 boxes; total 28 cars, 754 boxes. From Penryn, by carload lots, 7 cars; by local freight shipments and express, 600 boxes; total 7 cars, 900 boxes. From Loomis, 1200 boxes by local freight shipments and express. This gives these three towns a grand total of 35 cars, 2554 boxes. Besides these there were a few shipments made from Auburn, Rocklin and Lincoln.

**PEACHES GIVE WAY TO ORANGES.**—The forty-acre tract of peach orchard known as the "Palms," situated near Penryn and owned by J. Parker Whitney, will hereafter be known as an orange orchard, as the peach trees are to be dug out and replaced with orange trees. The planting will be superintended by P. W. Butler, and will be of the latest improved methods. The hole in which the tree is planted is much larger than in the old

way of planting, it being 6 feet at the top by five feet at the bottom and not less than 4 feet deep. In refilling the surface earth is used in the bottom of the pit, thus giving the tree a chance to take root in soft and cultivated earth, and allowing the moisture to penetrate deeper and to remain longer. From trees planted in this manner the crop has been 60% greater than from trees planted by the old methods. From trees eight years old the crop has been estimated to be three times larger, or, in other words, three boxes to one.

### SACRAMENTO.

**HOP CONTRACTS MADE.**—Record-Union: A. Menke has made a contract with Charles Green, Son, Brainard & Co. to deliver 60,000 pounds of hops to be grown in 1902 on his ranch a mile east of Perkins, at 10½ cents per pound. George H. Menke has made a contract with the same firm to deliver 30,000 pounds at 10 cents per pound for 1902, and also for the same amount and price for 1903 and 1904.

### SAN BENITO.

**GOOD PLOWING.**—Hollister Free Lance: A. Brooks broke the plowing record of this county at Fairview last week. With two New Deal gangs, on each of which were hitched seven horses, he turned over eighty acres of land—an average of ten acres a day to the team. Each of the gangs had four 10-inch plows.

### SAN JOAQUIN.

**INCREASED VINEYARD ACREAGE.**—Lodi Herald: There will be a large acreage of grapes planted in this vicinity this winter. The following acreage is being planted: Ex-Senator Langford 240, Ing Brothers 90, Keen Brothers 80, J. C. Thompson 80, a total of 480 acres. Besides, there will be several small vineyards planted this winter.

**ORANGES DOING WELL.**—When the Langford colony, now the world's largest fruit orchard, was set out, it was on the advice of an experienced Florida orange grower that Senator Langford set aside a few acres to an orange grove. From the time the trees came into bearing there has never been a crop failure, and this season the crop is unusually heavy. In hundreds of Lodi yards orange trees are bearing fruit. The soil and climate is adapted to orange culture, and that it is not more extensively engaged in by fruit men is accounted from the fact that other fruits pay equally as well and better, besides coming into bearing earlier.

### SAN LUIS OBISPO.

**SOME STRIKING VEGETABLES.**—Arroyo Grande Herald: The exhibit of fine vegetables that J. F. Brackett is sending to New York includes the following: Prize-taker onions grown by the McClure Seed Co.—they have raised of this variety 1200 bushels per acre; flat onions grown by Edward Bell, Arroyo Grande; brown Australian onions grown by same party yielding 400 bushels per acre, worth \$500 per acre; also Ox Heart carrots, yielding 65 tons per acre, worth \$5.00 per ton or \$325 per acre; also Half Long Yellow Danvers carrots yielding 80 tons per acre, worth \$400 per acre; Burbank potatoes, grown by Mr. Orand on Los Berros ranch, yield 200 bushels per acre; yellow and white field corn, grown by same party, very good; Mangle Wurzel beets, grown by John Rice, Arroyo Grande, two weighing about fifty pounds each, one weighing about seventy-five pounds; cabbages, two weighing about twenty-five pounds each; 100 pounds Burbank potatoes grown by Joseph Enos from a patch of ten acres, yielding 2600 bushels, which Mr. Enos sold for \$1500 or \$150 per acre, besides saving seed and the small ones fed to pigs. Some of these samples weigh five pounds each.

### SAN MATEO.

**A HUGE HOG.**—Redwood City Times-Gazette: At San Gregorio last week a large crowd gathered at J. Palmer's to witness the killing of a mammoth hog weighing 648 pounds. Many invitations were sent to Redwood City and other places. Mr. Palmer "bossed the job," killing and dressing the porker in a manner that would make the butchers at the Baden packing-house green with envy.

### SANTA BARBARA.

**THE OLIVE HARVEST.**—Press: Many of our olive growers are hard at work picking the fruit. The orchards are heavily laden, but the market is rather dull. Most of the fruit is being shipped to the Cooper plant to be made into oil.

### SANTA CRUZ.

**EUROPEAN RETURNS FOR PAJARO APPLES.**—Watsonville Pajaronian: Late mail advices from England state that California four-tier Newtowns sold at prices of Oregon five-tier Newtowns. This is a practical demonstration of the claim of W. N. White, published in last issue, that the grade of Pajaro Newtowns and the sizes of the boxes had been so cut that

four-tier stock shipped to England was of about similar size to Oregon five-tier stock. Newtowns which sold in London for 7s per box did not net here over 60 cents per box. Those prices represent a loss either to the packer (if he consigned) or the shipper who bought from the packer.

### SHASTA.

**GOAT RAISERS TO ORGANIZE.**—Searchlight: G. R. Williams of Bella Vista has been endeavoring for some time, without much success, to organize a county goat-raisers' association, with the objects, as with all organizations of the kind, to obtain better prices for local clips. It is Mr. Williams' idea that with the goat raisers of this county well organized, instead of shipping their hair as individuals to commission houses and being compelled to accept whatever price was offered, they could market their clips as a single lot, not by shipping and paying freight and then dickering with the commission men, who thus have them at their mercy, but by sending samples of their consignment to all the reputable buyers and asking quotations of prices. Mr. Williams' 1900 clip, sold in March, 1901, consisted of four bags of mohair, for which he received 36 cents for three bags and 40 cents for the remaining bag. The hair was considered a superior article and the price was above the ordinary. Mr. Williams is inclined to consider it a bait. The clip was sold in Boston, amounting to 1480 pounds, for which Mr. Williams received \$548.44, less \$62.58 freight.

### SONOMA.

**TEN-YEAR-OLD BOY KILLS A BIG COYOTE.**—Santa Rosa Press-Democrat: Robert Heald, a Bodega boy ten or twelve years old, shot a coyote a few days ago. On Monday he brought the skin and pelt to the county clerk's office and filed a claim for the \$5 bounty allowed by law. He was a much pleased youth. He was further gratified at the immediate allowing of his bill by the Supervisors, and he went home with his \$5 good piece.

### STANISLAUS.

**ORCHARDS FOR TURLOCK DISTRICT.**—Modesto Herald. The Ceres nurserymen, Reed and Richards, report the Muir and Elberta peaches, apricots, almond and Bartlett pear trees are the varieties for which the greatest demand exists. Spring will no doubt see 20,000 acres of Turlock District land in alfalfa (largely) and devoted to orchard and to field-garden products.

### TULARE.

**CITRUS LANDS IN DEMAND.**—Porterville Enterprise: S. E. and W. H. Henley have purchased in various locations land to the amount of over 1450 acres, at a cost of about \$26,000. The land purchased is all contributory to Globe and comprises what is known as the Ross property of 1200 acres, 600 of which will eventually be planted to oranges, and in time divided into tracts, after water has been fully developed; the Dillon place of eighty acres, north of Dan Bielich, also the Dan Bielich place (with J. Bursell) of forty acres, the Pat Ward place of eighty acres and forty acres of J. Bursell's land.

**LOTS OF MULES.**—Tulare Register: A gentleman of the name of Miller has arrived from Kansas City and has bought the Keck mules, 225 head, gotten together here in Tulare, and has bought enough more mules along the valley between here and Stockton to bring the total up to 500 head, which will be collected here and moved in a special train to the Kansas City market. Good figures have been paid as a whole, ranging from \$50 to \$100 per head, a good, big, young mule bringing the latter figure.

**A PIONEER'S FARM SOLD.**—Hanford Journal: The farm of J. C. Russell, deceased, 1½ miles north of Traver, was sold at auction Friday at Visalia by the administrator of the estate. It embraces about 300 acres of land. Julio Rosa of Tulare was the purchaser, his bid of \$9000 being the highest. The land is improved, 60 acres is in alfalfa, 30 acres in vines and 30 acres in fruit trees. The remainder of the tract is grain land. There is a house and a good barn on the premises and the whole ranch is fenced.

**REGRETS SELLING RANCH.**—Globe correspondence Visalia Delta: J. H. Boggs, who sold his 160-acre ranch with 90 acres of it under a good ditch, offered the purchaser, Claude Houghton, \$500 to sell it back to him, but he says nothing less than \$15,000 will take it now. Mr. Boggs bought 80 acres of the Graham farm and talks of planting 20 acres of it to oranges if the trees are not high this year.

### YOLO.

**BIG PLOWING.**—Woodland Mail: Peter Goetsch of the Fair ranch, while in Woodland recently, said that there were two traction engines employed on the ranch plowing and harrowing. Each draws 20-disc plows and turns over 40 acres of ground daily.



## THE STABLE.

### The Chance in Draft Horses.

Mr. H. G. McMillan of Iowa gave an address at an agricultural convention in his State which should be very encouraging to the breeders of draft horses. California is not doing as much in this line as is desirable and we hope a word from Iowa may exert an influence here.

**INCREASED DEMAND.**—Mr. McMillan claims that with the return of business and industrial prosperity throughout the land the demand for draft horses has very largely increased, and for no class of live stock has the market price advanced so rapidly within the past two or three years. In fact, the demand has become so out of proportion with the supply that buyers are scouring the country to find drafters of the right sort, and when prime good ones are found they readily bring from \$250 to \$350 each in the horse markets of the country.

While the renewal of industrial activity in the United States has had much to do with the increased demand for draft horses, it has not been the only factor. Within the past few years a new market has opened. The foreign demand for American horses practically began in 1893. During the World's Fair foreign horsemen visiting this country found good horses selling in our markets at a low figure, while there was a shortage abroad. As an experiment about 1000 horses were purchased at Chicago and exported with satisfactory results. With this small beginning and with a total of less than 3000 horses exported from the United States in 1893, our export trade has grown until the year ending June, 1900, it had reached the astonishing figure of almost 65,000 head, over half of which were draft horses.

**HINTS ON BREEDING.**—The official reports show that the increase in value of horses in the United States since 1897 has been a little over \$150,000,000, and in no class of horses has the increase been so marked as in draft horses. As the quality improves the difference in values will be still greater. In raising of draft horses a wise selection of breeding stock is of the utmost importance. Draft horses with action, good bone, heavy weight and proper conformation cannot be produced from undersized, inferior and unsound breeding stock.

First of all a brood mare should be sound and free from hereditary blemishes. A sound mare with good bone and wide draft type, even though she may not be very large, if mated to the right kind of a stallion, may produce drafters of a high order. The stallion is of even greater importance than the mare. On account of there being so many mares that are somewhat undersized it is especially important that the stallion should be large and heavy boned. Soundness in the stallion is essential also and I am surprised that farmers pay so little attention to this all-important point, both in buying a stallion and when breeding their mares.

Next to soundness size and bone are important. When I speak of size I do not mean weight alone. Too many buyers are deceived by mere weight. Weight is necessary, but it is not the only essential. A draft horse at maturity, in fairly good condition, ought to weigh from 1800 pounds to a ton. If a horse of this weight is of good disposition, of proper conformation, is sound of body and limb, with heavy bone, legs set squarely under him, with feet of sufficient size and quality, possessing at the same time that style and action so frequently seen in the highest type of draft horse nowadays, he ought to make an ideal draft sire.

While the electric car, the bicycle and the automobile has possibly, to some extent, displaced the lighter horse, nothing yet has been discovered to take the place of the draft horse in drawing heavy loads up hill and down or over stony pavements or through the mud and in many other ways meeting the growing and unrelenting de-

mands of commerce and trade. The fear that the horse will be superseded by electricity as a motive power is entirely without foundation. This is demonstrated by the fact that no invention of the past century has lessened the work of the horse on the farm, while nearly every improvement in farm machinery has necessitated the use of more horses. The draft horse stands to-day for the highest standard of agricultural and industrial prosperity. He is the farmer's horse and king of the market as well.

## CEREAL CROPS.

### The Grain Growers' Organization.

Efforts are being made by the grain men of the State, through the California Grain Growers' Association, to form a combine that will have the effect of reducing freight rates on grain by land and water, says the Woodland Mail. F. E. Wright, secretary of the association, was in Stockton Thursday on business connected with the work. He has appointed six canvassers to call upon the farmers and outline the proposed proposition, the object of which is to route grain from Port Costa to Liverpool. All grain growers will be asked to sign the agreement and become members of the association.

Just as soon as the majority of an average crop is under control a convention will be called. It is expected that this meeting will be held the latter part of February. Over half of the acreage in Butte, Colusa, Tehama, Sutter and Yolo counties has been signed. The farmers in Oregon have just organized on similar lines, and the grain growers in Washington are taking steps to form an association.

Mr. Wright in discussing the proposed association in this State, said:

"The grain of each one is not to be pooled and pass out of his control, but each member of the proposed association will be required to bind himself to ship his grain by the route the association may select.

"It is conceded that the association, by securing the routing of one-third of the output of the grain of this State, can get its own terms as regards charters. There is capital, with energy and brains back of it, that stands ready to make us propositions that at present will save to the growers 15 cents per hundred. Last July there would have been a saving of 25 cents per cental. (At that time charters were quoted at 42 shillings). I claim that the movement started in San Francisco by the united efforts of the San Joaquin Valley Development Association last July is the direct cause of the fall of prices of charters quoted since that time.

"Now, if the rumors of a proposed organization brings such results, what will a perfected organization do?

"Our cousins across the pond are paying a good, fair price for our grain, and if the charter charges were quoted actually, instead of fictitiously, we would have a safe margin of profit. We are out from 15 to 25 cents a hundred. We know where it is and we are going to reach out and get it, not as individuals, but as a capable business organization with over 50 per cent of the grain at our command."

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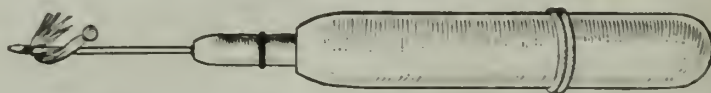
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## THE IRRIGATOR.

### How a Diverting Dam Was Made in the Merced River.

Although the primary purpose was to divert water for generation of electricity, the dam recently constructed by the Mariposa Commercial & Mining Co., in Mariposa county, Cal., is properly an irrigation subject, for the waste water is available for this purpose.

All of the Sierra rivers have their high stages, when work in them is impracticable through the winter and spring and very nearly through the summer months. The Merced river is pretty well south of the region of maximum precipitation and there is, ordinarily, a season of low water a little longer than for the more northern streams. Last year was an exception and high water continued, so that work on the dam in the river did not commence till July 14.

countered in this channel, necessitating the use of a 6-inch discharge Jackson centrifugal pump, belted to an 8x10 horizontal engine. Work was delayed several days at this point (August 2) by a sudden rise in the river due to a cloudburst in the mountains above Yosemite valley which washed out some of the upstream wing dam. The toe planking on this section of the foundation cribbing was omitted for a length of 36 feet and a depth of 4 feet to allow the water to pass through while work was in progress in the middle channel.

It was in the middle channel that the greatest difficulty with water was encountered. Progress was made very rapidly through the 8 feet of gravel first encountered, but the underlying quicksand required sheet piling driven across the bottom of the channel as closely as possible, and the seepage was all that could be handled by the 6-inch pump and another 5-inch centrifugal pump which was installed as an auxiliary. Bedrock was stripped along the toe and

tion cribbing of the old dam being used where available. This was all that there was of the old dam, the portions in the south channel being torn out and that in the north channel having been washed away years ago.

The foundation cribbing is all 6-foot centers, with the longitudinal sills reinforced by blocks in the spaces between. The "A" frames are also 6 feet center to center. The details of the construction cost account are as follows:

LABOR.	
Carpenters, laborers, etc.....	\$15,381 13
Superintendence, surveying, etc....	281 28—\$15,662 41
MATERIAL.	
Lumber, 647,000 ft. mountain pine.....	\$12,499 24
Round timbers, 43,000 ft., board measure.....	750 02
Bolts, nuts, washers, etc., 14,950 lbs.....	627 87
Drift bolts, 3/4x21-inch, 6720 lbs.....	228 52
Nails and spikes, 6800 lbs.....	264 26
Cement, 101 bbls.....	537 60
Wood, 121 cords.....	364 70
Coal (blacksmith's), 5900 lbs.....	87 50
Oil, packing, waste, etc.....	90 16
Powder, caps and fuse.....	60 54
Sundries.....	58 37—\$15,568 78
PLANT.	
Tackle, tools, derrick, etc.....	\$ 583 77
Cars, rails, wheelbarrows, etc.....	289 69
Pumping plant (2 boilers, 2 engines, 2 centrifugal pumps, 5" and 6", piping, fittings, etc).....	1,192 03—\$ 2,065 49
	\$33,296 68

A MAN can do what he pleases with the bank of the stream which he owns; but if he diverts the course of the stream or narrows the waterway to the injury of an owner on the opposite bank or elsewhere, the latter party has his remedy in an injunction or a suit for damages. This system works fairly well, so far as damages due to the action of streams at their ordinary stages are concerned.

"SECOND-FEET" is the discharge of water in cubic feet per second; 1500 second-feet means a flow of 1500 cubic feet per second. This multiplied by 3600 (the number of seconds in an hour) gives 5,400,000 cubic feet per hour; that divided by 100 gives 54,000, the flow in miner's inches.

THE velocity of steam does not vary directly with the pressure. The velocity of steam at 180 pounds gauge pressure is 1969 feet per second, and at 100 pounds 1876 feet per second. The theoretical velocity of water at 100 pounds pressure is 122 feet per second.

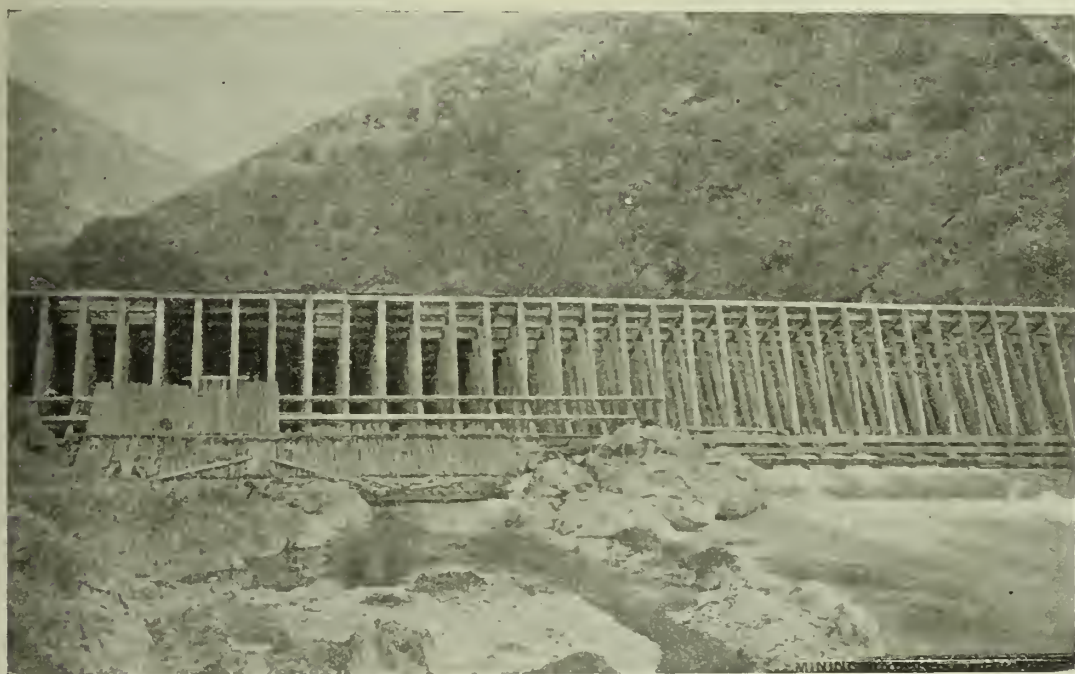
### Increasing U. S. Silver Coinage.

The House Committee on Coinage, Weights and Measures have reported favorably a bill providing for the maintenance of the legal tender silver dollar at a parity with gold, and for the increase of the subsidiary silver coinage. The bill authorizes the coinage of subsidiary silver coin without regard to limit and as public necessity may require. The most important feature of the bill for the parity of gold and silver dollars is as follows:

"The Secretary of the Treasury is hereby directed to maintain at all times a parity with gold the legal tender silver dollars remaining outstanding, and to that end he is hereby directed to exchange gold for legal tender silver dollars when presented to the Treasury in the sum of \$5 or any multiple thereof; and all provisions of law for the use or maintenance of the reserve fund in the Treasury relating to United States notes are, in the discretion of the Secretary of the Treasury, hereby made applicable to the exchange of legal tender silver dollars."

THE rain and snow fall in southern Oregon and in California are up to the date of this writing much less than usual at this period of the season. In ordinary seasons there would be several feet depth of packed snow at elevations of 5000 feet in the Sierra Nevada mountains. At the present time there is no snow on the ground at all at 7000 feet elevation. The water supply for mining will almost certainly be short this season, particularly where dependence is wholly on the direct run-off. Reservoir supplies are less likely to be short. The early seasonal rains of October and November gave the reservoirs so good a start toward filling that the late rains are sure to fill them. The snow that will probably yet fall before April will melt rapidly through not being packed and frozen down. The season of high water in the rivers will come early this year, but it is exceedingly improbable that it will last long.

THE value of mineral products in the United States in 1900 exceeded for the first time the billion dollar mark, according to the Geological Survey report on mineral resources. The figures were \$1,067,603,636, as compared with \$971,900,894 in 1899, a gain of \$95,702,742, or 9.85%. Iron and coal yielded over half of this total, their combined value being over \$566,000,000. The most important gains in gold production were in the Seward peninsula of Alaska, the Cripple Creek district of Colorado and in Arizona. The yield for the year is valued at \$79,171,000, a gain of \$8,117,600 over 1899. The silver output was of the commercial value of \$35,741,140. The crude petroleum production exceeded all records, the large increase being especially noted in West Virginia, California, Ohio, Indiana and Texas.



Benton Mills Dam, Mariposa River, Cal., During Construction



Benton Mills Dam After Completion.

For several weeks after this time, while the cribbing foundation was being put in, the stream flow exceeded 6000 miners' inches (22 cubic feet) per second, being about three times the quantity of the ordinary minimum flow of this river.

The method employed in making the construction is as follows: A wing dam of sacks and dirt and rock was run out from the south bank of the river, turning the water into the north and middle channels, and the foundation cribbing and toe were put in place and finished, with the exception of a section of the top 4 feet of the toe planking, about 300 feet long, which was left open to allow the water to run through. Very little trouble was experienced with water in this part of the work, all the seepage being handled very easily by a 10x6x10 duplex pump.

A wing dam was then run out from the north bank of the river, turning the water into the middle and south channels, and the bedrock in the north channel was stripped, a wing dam having also been thrown across the channel below the site for the foundations to keep out the back water. More water was en-

the planking and cribbing were put in place as shown in the cross-section of the dam, the sills being bolted to the sides of the channel.

The foundation cribbing was finished and filled with broken rock and gravel, the toe planking which was omitted was spiked on under water, and the river was allowed to run over the top of the toe planking while the superstructure was being erected. The planking was nailed on, leaving three doors with a width of 36 feet and a height of 8 feet hinged on the upper side, through which the water flowed while work on the skin and abutments was completed. The doors were closed at 5:30 p. m. on November 19 and the water flowed over the crest of the dam at 7 a. m. November 21, it having taken thirty-seven and one-half hours to fill the dam. The foundation cribbing was started by laying the longitudinal sills in cement on bedrock and bolting them down with 1x42-inch anchor bolts, 6-foot centers. This was carried out throughout except in the bottom of the middle channel, where the construction plan was as is shown in the sketch, the founda-



## THE HOME CIRCLE.

## The Dead Child.

Sleep on, dear, now,  
The last sleep and the best,  
And on thy brow,  
And on thy quiet breast,  
Violets I throw.  
Thy scanty years  
Were mine a little while;  
Life had no fears  
To trouble thy brief smile  
With toil or tears.  
Lie still, and be  
For evermore a child!  
Not grudgingly,  
Whom life has not defiled,  
I render thee.  
Slumber so deep,  
No man would rashly wake;  
I hardly weep,  
Pain only, for thy sake,  
To share thy sleep.  
Yes, to be dead,  
Dead, here with thee to-day,—  
When all is said  
'Twere good by thee to lay  
My weary head.  
The very best!  
Ah, child, so tired of play,  
I stand confessed;  
I want to come thy way,  
And share thy rest.

—Ernest Dowson.

## Martha Ellen's Opportunity.

Martha Ellen was walking home from school. It was a gray November day, the sky lowering and the air raw, although no wind stirred the drifts of fallen leaves that lay along either side of the country road.

Martha Ellen chose to scuffle through the leaves. The crisp, rustling noise fell pleasantly upon the surrounding quiet and comforted the loneliness in Martha Ellen's heart. She moved slowly through the leaves, her eyes idly noting the little cloud of dust that arose from them. Then she looked up at the gray sky and away off across the meadows to the hills beyond, more dim than ever on this dull day.

Martha Ellen's eyes slowly filled with tears.

"I won't ever have a chance!" she said aloud. "I know I won't."

She was a small girl, fifteen years old, but of low stature. The tumult that was going on in her heart this gloomy day might have appeared ridiculously large for so small a creature, but this was a very real conflict and it clouded the round face woefully.

Perhaps it was ambition; Martha Ellen wanted to be a great woman; she wanted to do something heroic, something that would lift her out of her little narrow commonplace life.

She had always known this longing since she had learned to read well enough to enjoy her history and the books that some previous teacher had given to found a school library, but it had only been a secret hope, a something to dream over while she was lying in her little room at night waiting for sleep to come; a something to lighten tedious tasks and shorten the long walk to school.

At various times Martha Ellen had been a Joan of Arc, a Florence Nightingale, a wonderful singer and a great poet; but these lofty positions did not interfere with the lowly occupation of dishwashing or baby-tending and not even her mother suspected the dream-world in which the girl was living.

On this morning Martha Ellen had not been especially conscious of her ambitions as she started for school. She had noticed the cloudy sky and thought of the probability of rain, and she had stopped to watch a flock of wild geese pass over. But it happened to be the last school day of the week, the teacher had given them a "talk," and that teacher's "talks" were always listened to with interest by even the sleepest or most restless youngster in the room. To-day she had talked of heroes and of heroic deeds, and she had tried to impress upon them the fact that to be a hero does not always mean that one must be a George Washington or a Christopher Columbus.

Her words had set Martha Ellen's heart and mind aflame, but when she stepped out of the school-house

and the cold air touched her cheek, the girl had been rather too suddenly recalled to her prosaic, every-day existence, and she scuffled through the dead leaves with her blue eyes filled with tears as they strayed off to the distant hills.

"I won't ever have a chance," she repeated. "I'll just be plain Martha Ellen Miller to the end of my days, and I don't s'pose I'll ever see what the world's like 'way off the other side of those hills. It seems as if I just couldn't breathe if I've always got to live right here. How can I be anything great here?"

Martha Ellen went on rustling the leaves and wiped her eyes with a corner of her blue gingham apron. She wondered if great women had ever been obliged to wear gingham aprons to school.

"Abraham Lincoln was born in a log cabin," she reflected, "but then he didn't stay there always; and, besides, he was a boy. Oh, dear!" she sighed, as she turned in at the little gate; and then her practical every-day side asserted itself. "I wonder if I'm too late for mother to go up to the sewing bee?" she thought, with a pang of self-reproach for her loitering feet, and she ran up the path.

As she opened the kitchen door a small figure hurried across the room and clasped her knees and a little frightened white face hid itself in her skirts. From an adjoining room came a baby's fretful cry.

Martha Ellen bent over to unclasp the clinging arms.

"What is the matter, Joey?" she asked. "Where's mother?"

"Oh, Marfy, I'm so glad you're here," whispered the little fellow, raising his frightened face. "Mother's down dare," pointing to the cellar stairway; "she falled and she won't move even when baby c'ies."

Martha Ellen's face was as white as Joey's, and she did not stop to ask any more questions. She gently put the little fellow aside, and, holding her breath in her suspense, hurried down the dark stairway.

In the light that fell from the low window she could see her mother lying on the cellar floor. She had evidently pitched forward from the stairs and had fallen on her face. Martha Ellen's heart stopped beating for an instant as she bent over the silent figure and laid her hand on her mother's head.

"She's all blood!" the girl nearly screamed aloud; then she remembered Joey's little white face at the head of the stairs. "Oh, mother!" she cried, bending closer, a terrible fear seizing her. She laid her hand over her mother's heart and felt it beating, then she sank down on the floor, trembling from head to foot.

The baby cried out again, and that roused Martha Ellen to her responsibility.

"I can't carry her up alone," she said to herself; "I must get some one to help me."

She started up the stairs, and at that moment the outer door opened, and the traveling baker, who passed that way once a week, stepped into the kitchen.

"Anything wanted to-day?" he called. The cheery voice rang out strangely in the quiet that had been unbroken so long save for the baby's whimpering.

To Martha Ellen it came like an answer to her muttered prayer for help.

"Oh, yes, sir," she cried, appearing like a ghost of her rosy self, at the head of the cellar stairs.

The man started back.

"What's the matter?" he asked.

"What has happened?"

Martha Ellen grew more calm as her eyes fell upon Joey's startled face.

"My mother has fallen down stairs. Will you help me bring her up? There, Joey, you run in and try to quiet baby so he won't bother mother. He must not see her; he must not remember mother this way," she thought, as the little fellow turned reluctantly away.

The baker glanced at the girl in silent admiration as she spoke, and then he followed her down the cellar stairs. His own face was white when he returned with his poor burden and

laid the limp figure on the bed, which Martha Ellen, with a few quick touches, had made ready.

"Thank you, sir," said the girl, quietly, although her lip was trembling. "Now would you please get the doctor for me as you drive by? I hope he'll be at home."

The baker made his way to the sink a little unsteadily and hastily swallowed a glass of water.

"My, but you're a plucky one!" he exclaimed. "I'll send along the first women folk I meet, and I'll find the doctor for you and bring him here myself."

"Thank you," said Martha Ellen; "you're real good."

"I'll go right along," said the baker; then he paused a minute. "Don't you worry," he stammered. "She isn't—I guess she's all—"

"I know, sir," said Martha Ellen, faintly. "Please hurry."

She turned back to the little bedroom and drew a blanket over her unconscious mother.

"I don't know what to do," she thought. "I must wait till the doctor comes. Perhaps I'd better bathe her head." She got some soft cloth and a basin of water and washed off the bloodstains and laid a damp cloth across the forehead.

The minutes seemed so long before the kitchen door opened and she heard a step. Mrs. Fenley, their nearest neighbor, looked in.

"You poor child!" she cried, and then as she saw the motionless figure. "Oh, how can you stay here!"

A low moan, the first sign of returning consciousness, came from the lips of the sufferer. Martha Ellen bent eagerly to listen; then she drew a deep breath.

"Mrs. Fenley, will you go and see to baby and keep Joey with you in the sitting-room?" she said, in a low voice. "I must stay here with mother."

Mrs. Fenley hesitated.

"You'd better let me stay," she said; "I'm more used to sick folks."

"No," said Martha Ellen, firmly, "Go please." And Mrs. Fenley went to comfort the frightened Joey and his fretful charge.

Martha Ellen kept changing the wet cloths, listening eagerly for another moan, until the doctor appeared. Without speaking, he came to the bedside and began to make a careful examination of the bruised head.

Martha Ellen watched him silently.

"I'm afraid her arm's broken," she said at last, as the doctor turned to look for injuries.

"Yes," he said, "it is. Poor, poor woman!"

"Is she hurt much, sir?" asked Martha Ellen, with a little tremble in her voice, and the doctor turned quickly.

"You poor child," he said, impulsively, "you've been so quiet I almost forgot it was your mother. But you are brave enough to hear the truth. She is badly hurt, but with careful nursing we will hope that she will be better soon. Did you bathe her head? You have done just the right thing, my dear."

Martha Ellen suddenly felt faint and weak. Then she heard the baby's cry.

"I must go for a minute, sir," she said. "It's his supper time."

The baby held out his little arms to the big sister, who took him from Mrs. Fenley and sank into the rocking-chair. Joey crept up beside her and clung to her arm. A number of frightened neighbors had gathered in the little sitting-room by this time, all eager to be of service, but no one knew what to do.

"Now, Joey," said Martha Ellen, gently, "you must be a good little boy and help mind baby. Mother fell and hurt herself, and sister must go and help the doctor make her feel better. I'll get baby his milk and you sit by while he drinks it, so he'll be good."

"I will," said Joey, softly, "but Marfy, I want to see mother. Won't she speak to me now?"

"Not yet," said Martha Ellen. "By and by, dear. You must be good and wait." She started to rise, but some one near laid a motherly hand on her arm.

"Now, Marthy Ellen, you just sit where you be," whispered Mrs. Meggs from the village. "You must be all beat out, child. I'll just get the milk and feed the baby, too, and Joey shall have a ginger cookie to eat. That will be good, won't it Joey?"

Joey nodded, but still clung to Martha Ellen's arm, when the doctor opened the door.

"I must have some one to help me," he said, "and I don't want any one who is going to faint."

The women looked at one another, each hoping that some other would offer to go, and no one spoke till little Martha Ellen quietly arose and put the baby in Mrs. Meggs's arms.

"I'm to help you, doctor," she said simply.

The doctor looked down upon her and shook his head.

"My child, it is your mother," he said.

Martha Ellen raised her eyes to his. "That's why I must go," she whispered, and the doctor turned away without a word.

The women began to protest, but Martha Ellen gently loosened Joey's clinging fingers and slipped from the room.

An hour or so later, when the unsuspecting husband and father returned from his work, Martha Ellen met him at the door and quietly told all there was to tell, before any other should have the chance to alarm him.

The wounds were dressed, the patient was in bed, returning to a fitful consciousness, and all signs of the accident had been removed from the room. Leaving the doctor to reassure her father, Martha Ellen slipped back to the bedside. She listened to her mother's breathing, to the occasional moans, and watched every quiver of her own weariness.

The doctor and her father came in, and she moved back, slipping her cold little hand into her father's encouragingly. The doctor met her questioning gaze as he lifted his eyes from a careful scrutiny of his patient.

"Mr. Miller," he said quietly, "you ought to be very proud of your daughter. If your dear wife lives it will be chiefly due to the presence of mind and quiet common sense of this young girl. She has helped me as few could have done under the circumstances. Martha Ellen," he added taking her other hand affectionately, "it is of such stuff as you that God makes heroes. I am proud to know you, little woman."

Martha Ellen's white face flushed a deep crimson, and she turned wide, surprised eyes upon him.

"Heroes!" she exclaimed, "heroes?"

"Yes, 'heroes,'" said the doctor.

"Why not?"

"Oh, nothing," said Martha Ellen, shyly, as she turned away.

Martha Ellen nursed her mother through the long weeks that followed, and when the first dreadful anxiety was over and the dear patient slowly began to recover, the young girl found great satisfaction and happiness in carrying out the doctor's orders and making the invalid comfortable. And ever, while she acted as nurse or cared for Joey and the baby or prepared her father's meals, the wonderful words the doctor had uttered kept ringing in her heart, "Martha Ellen, it is of such stuff as you that God makes heroes."

One afternoon as the good man was leaving Mrs. Fenley came in.

"Now, look here," said the doctor, turning back, "I have an idea, Martha Ellen, put on your hat and jacket and I'll take you for a little drive. Mrs. Fenley can sit with your mother, and you haven't breathed the outdoor air for a week."

Martha Ellen was very willing to be persuaded, and soon she was jogging over the old turnpike behind the doctor's gray mare.

"Isn't it a nice day!" she cried. "How pretty the fields look with the sprinkling of snow on them."

"I guess this air will bring back a little color to your cheeks," said the doctor, smiling. He had grown very fond of Martha Ellen during these weeks of work together.

"Martha Ellen," he said at last, "how would you like to be a nurse—"



to go to a training school and a hospital and learn all that a good nurse should know?"

Martha Ellen turned to him with astonishment in her eyes.

"Do you mean it?" she gasped. "Could I?"

"Of course you could," replied the doctor; "you have in you the making of a most excellent nurse. You are brave and sensible and you don't faint at the sight of a cut finger."

Martha Ellen sat speechless beside him, and the doctor went on.

"Of course, you will want to go to school for a year or two more; but, if you like, you can come to me once a week, and I will give you books to read and teach you what I can. Then, when the time is ripe, I will send you to a good training school."

"And would I be a real nurse then?" asked Martha Ellen eagerly. "Would I know enough so I could do something great someday if I ever had the chance, like—like Florence Nightingale?"

The doctor smiled.

"I think your duty will always find you ready, Martha Ellen," he said quietly.

The girl's eyes filled with tears, and she looked off across the meadows.

"I used to think I would never see the world over there," she said, pointing beyond the hills; "I used to think I'd never have the chance to learn how to be a—how to do—"

"Martha Ellen," said the doctor, gently, "did you ever hear the old proverb, 'Opportunity comes with feet of wool, treading soft?' Well, your opportunity came; you didn't hear the foot of wool, perhaps; you didn't even think of it as an opportunity at all, but you were ready for it, and you quietly did your part. You found your opportunity at your own door, and it has pointed out for you the life path which you can most nobly follow."

"And you really think I can be somebody some day?" asked Martha Ellen, turning her glowing eyes upon him.

The doctor smiled into them.

"I think," said he, "that you will make a nurse of whom I shall be proud, and I am sure you will fill a useful place in this great world."

"You do mean it, honest."

"Yes, Martha Ellen, I do—'honest,'" repeated the doctor, and the years have proved that he was right.—Ledger Monthly.

#### Meissonier's Cute Gardener.

A good story is being told about a gardener who was for many years in the service of Meissonier.

This gardener was not only wonderfully skilled in the art of cultivating flowers and vegetables, but he also was a true scientist, and as he was endowed with a phenomenal memory he was able to give offhand the botanical name of any plant that was shown to him. Some of his employer's friends frequently tried to baffle him by handing him seeds or cuttings of exotic or other out-of-the-way plants, but they never succeeded.

Now Meissonier was proud of him, but he vowed that he would, once at least, bewilder him, and one day, while Emile Augier was dining with him, he summoned the gardener, and taking from his pocket a small paper package, in which he had previously placed some eggs of dried herring, he said to him: "Here are some curious seeds. Can you tell me what they are?"

"Of course I can, sir," replied the gardener, and after examining them for a moment or two he gave them a most impressive Lath name.

"If you sow them now," asked the painter, "how long will it take for them to appear above ground?"

"A fortnight," was the reply.

"Well," said Meissonier, "I wish you would sow them at once, for I am curious to see what kind of plant it is."

A fortnight later Emile Augier, desiring to see the end of this joke, came to breakfast at the painter's villa, and as he and his host were at table the gardener presented himself and said: "If you gentlemen will oblige me by stepping into the garden I will show

you the plants that those curious seeds have produced."

The two friends followed him to the conservatory, where he pointed out to them twelve odd-looking objects in a box filled with freshly watered brown earth. They stooped to examine them more closely, and the next moment they burst into shouts of laughter, for the strange objects were the heads of twelve red herrings.

#### Where Ye Spankweed Grows.

There's a corner in our garden, but my nurse won't tell me where, That little boys must never see, but always must beware.

And in that corner all the year, in rows, and rows, and rows, A dreadful little flower called the Spankweed

Grows!

My nurse says that if a boy who doesn't wash his face, Or pulls his little sister's hair, should ever find that place, The spankweed just would jump at him, and dust his little clothes.

Oh, it's never safe for fellers where the Spankweed

Grows!

Some day I'll get the sickle from our hired man, and then

I'll go and find that spankweed place—it's somewhere in the glen.

And when I get a-swingin' it an' puttin' in my blows,

I bet there'll be excitement where the Spankweed

Grows!

—Paul West.

#### The Need of Water Drinking.

A well-known nerve specialist has said that "all neurasthenics (that is, people with unhealthy nerves) have desiccated nerves and suffer from an insufficiency of fluid in the tissues of the body." It is probable that we all, in more or less degree, even when not conscious of any definite symptoms, are suffering in some part of our system for the lack of enough fluid, and especially of enough pure, cool water.

We know that so nicely is the human body adjusted and adapted to its uses that one part cannot suffer without all suffering. If the nerves are desiccated, or dried through lack of fluid, then it is certain that other tissues are also suffering from the same lack, and that the wheels of the wonderful machinery are being clogged by reason of waste matter which is not washed away.

We see by this that water does for us a three-fold service. It feeds, it washes and it carries away the cinders of the body furnace; and through the want of it we are exposed to many and great dangers. The tissues become too dry, the blood is thick and its flow sluggish, and the retained waste of the body sets up a condition which the doctors call "auto-intoxication" or self-poisoning." This condition may give rise to almost any known symptoms, from a pimple to heart failure, and is really responsible for most of the semi-invalids with whom the world is largely peopled.

To obtain the best results from water drinking certain rules must be observed. People do not all need the same amount, and it may take a little experimenting to find out just how much should be taken in individual cases. It has been stated by some physicians that five or six pints should be taken during the twenty-four hours. Of this only a moderate quantity should be taken with the meals. It is a mistake to take no water with the meal, but it is, perhaps, a greater mistake wash food down with water, especially with ice water.

The best time for water drinking is at night and early in the morning. It is well to form the habit of slowly sipping, during the bath and while dressing, two or three glasses of cool—not ice cold—water. Two or three more may be sipped at bedtime, and again two or three glasses an hour or two before luncheon and before dinner.

In a very short time the value of this habit will become apparent and the resultant general improvement in digestion, temper and appearance.—Youth's Companion.

## DOMESTIC ECONOMY.

### Domestic Hints.

**TOMATO SAUCE.**—Place two cups of tomatoes and one sprig of parsley, one leaf of celery, one bay leaf, two slices of onions and two cloves over the fire; simmer for twenty minutes; strain, add one tablespoonful each of butter and flour; cook gently until it thickens; season with salt and pepper. Nice with any kinds of meats.

**SPLIT PEA SOUP.**—Wash and soak one cup of split peas in two quarts of water over night. In the morning put into a kettle with a large piece of salt pork and one quart of good soup stock. Simmer five hours, then strain, and return to fire with a small lump of butter; salt and pepper. Serve with croutons made of toasted bread cut in small squares.

**OYSTER SANDWICHES.**—Half a dozen large oysters fried and perfectly cold, lay a crisp lettuce leaf dipped in French dressing on them, buttered slices of white bread, or spread a little mayonnaise on each leaf. Cut the oysters into nice little slices, crosswise, rejecting the hard part, and lay the slices, overlapping one another, between the lettuce leaves.

**CHOCOLATE PUDDING.**—Beat one-quarter of a pound of butter to a cream and stir in six egg yolks, one at a time, then add a quarter of a pound of fine, sweet chocolate grated, a cup of almonds blanched and chopped fine, six tablespoonfuls of granulated sugar, and one tablespoonful of citron cut very fine, beat the six whites of eggs to a stiff froth and stir in at the last. Pour into a mould and boil three-quarters of an hour and send to the table hot with whipped cream poured around it, or any fine sauce served in a sauceboat.

**SCALLOPED APPLES.**—Pare, core and cut in slices some good, tart cooking apples, put a layer in a baking dish with sugar, cinnamon and a grating of lemon rind, dot with tiny lumps of butter, then another layer of apples, sugar, etc., and so on until the dish is full. Add a very little water and the juice of a lemon, and use a little more sugar and butter on top than on the other layers. Bake until the apples are thoroughly cooked. Cover until nearly done, when the cover should be removed to allow them to brown. Serve hot with cream or hard sauce.

**CREAM DATES.**—Take the white of one egg and an equal amount of cold water. Beat together until well mixed. Purchase two pounds of confectioners' sugar, and stir in a little at a time until the egg is so thickened that it may be rolled. Flavor with vanilla or any flavor that may be preferred. Put on a board and knead for a few moments. Remove the stones from half a pound of dates, take a piece of the sugar the size of a hickory nut, roll it in the hands until the length of the date. Prepare two pieces in this way and stick one on each side of the date. Pinch them closely together so they will adhere. Stand away until slightly hardened.

### Hints to Housekeepers.

To remove fruit stains from the hands rub them with a raw tomato.

Borax and white sugar form a good compound for destroying ants and cockroaches.

When charlotte russe is dark in color it is on account of the color of the gelatine which has been used. To have it snow white, use white gelatine.

A torn gown is generally best darned on the outside, ravellings of the material being used instead of either silk or cotton. When the rent is repaired, press it on the wrong side with a hot iron, and it will hardly be seen and may escape detection altogether.

To restore the color of old lace, first squeeze the lace clean in a hot, soapy lather, then rinse in clear water. Squeeze as dry as you can, and let it lie in cold milk for several hours. After this, squeeze dry and iron in the usual way. Lace should be pulled carefully into shape before ironing, and pressed

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with a rather cool flatiron on a board covered with several thicknesses of flannel only.

In sauteing oysters and most kinds of fish, a little lemon juice added to the fat in which they are cooked improves their flavor. Sardines prepared in this way make an excellent dish for Sunday-night suppers.

Dishcloths should be washed every time after using if they are to be kept nice. First, wash in a nice lather, then soak in scalding water, squeeze and dry. The very nicest dishcloth is the old-fashioned one of knitted cotton, as this will wash and wash again and look as good as new.

Great care should be taken in washing delicately tinted shirtwaists or summer gowns, to prevent fading. Alum used in the rinsing water will prevent green from fading. A handful of salt, thrown into the rinsing water, should be used to set blue. Ox-gall is good to use for gray or brown. Hay water, made by pouring boiling water over hay, is excellent for washing tan or brown linen.

A ragout of calves' hearts is delicious and may be served over toast for breakfast or luncheon. Prepare and cook the hearts until they are tender. Then cut them into pieces, roll them in flour and saute them brown in a generous quantity of butter. Add a little onion, a carrot and a cupful of beef stock or of water and boil for about an hour. Mix some cornstarch with cold water, about a tablespoonful to a pint of the ragout; stir it into the boiling mixture and cook five minutes longer, stirring constantly.

Accessories for the sick room cannot be too dainty in appearance, but above all is it important that they shall be washable. A pretty medicine glass cover, made of a piece of circular white linen, may be embroidered in some delicate design and the edge buttonhole stitched. Near the center two small eyelets should be worked. Then a piece of glass corresponding in size and shape should be obtained at the glazier's, and this, too, should have two small holes, similar in location to those in the linen. When the work is finished the linen is tied with baby ribbon to the glass, and a most serviceable and at the same time attractive article for an invalid is ready for use.

Among the many charming devices for pincushions none are more attractive than the round ones, covered with some plain soft silk with a puff of the silk around the side. Over the top and bottom are laced across the puff either a daintily embroidered round piece of white linen or of lace. One of the prettiest is made with lace covers crocheted in a pattern that reminds one of the Irish lace patterns. The thread used for the purpose is No. 100. The soft puff of silk puffs out between the lacings, which are made at every broad scallop. When linen is used the edges are scalloped and buttonhole stitched, and eyelets are worked in each broad scallop for the ribbon or silk cord. Sometimes no cover is used for the bottom, the top being laced and tacked at the base of the puff and giving the same effect on the top.



## Vegetable Growing in Alameda County.

The area devoted to vegetables in Alameda county, says the Oakland Enquirer, has been increasing lately at a rapid rate, since the profit which is found in peas, potatoes, tomatoes, rhubarb, asparagus and several other vegetables is large enough to tempt the owners of the best soil to go into the business. Twelve or fifteen years ago the production of early vegetables for the San Francisco market was the most important part of the industry, and this was conducted largely by the Portuguese, who secured locations on the hillsides from Warm Springs around to Haywards and San Leandro.

The hillside region produces the early vegetables, and the potatoes and peas grown here commence coming into market even before spring has arrived, for the winter rains are all that is needed to bring forward the crop in this belt, which is practically frostless. But, while years ago this early vegetable growing represented the predominant industry, and while it is still a rather important one, it probably does not pay so well as it did formerly, since now early vegetables are brought in from Arizona and other southern regions. There are also hints that the productivity of these hillside lands is diminishing, and that the growers obtain smaller profits.

**THE REGION.**—The center of the vegetable industry now lies elsewhere. It is found very profitable to grow certain vegetables on deep, rich valley lands, which, although they do not produce so early, bear much larger crops. No very accurate figures on the acreage devoted to vegetables in this county can be obtained, but fairly trustworthy estimates have been made by many persons who have opportunities to know. One of these estimates is that there are 8000 acres devoted to vegetables in Alameda county, not including sugar beets, which would add 4000 or 5000 acres more. The most important crops are peas, potatoes, tomatoes, cucumbers and summer squash. A large part of the vegetable business is done between Haywards and Elmhurst, although a great many tomatoes are grown in other parts of the county, including the Livermore valley. In former times the vegetable business was largely in the hands of Portuguese and Italians, who conducted it in a small way, on account of lack of capital; but the wealthier American farmers have now taken it up in a wholesale fashion, since they find that it pays better even than fruit. A crop can be obtained the first year after planting, while it takes five years to secure a producing orchard. A great many vegetables are also grown between the rows of trees.

**TOMATOES.**—The tomato region of Alameda county extends along the bay shore from Mt. Eden to Elmhurst, and the tomatoes produced in this region are preferred by the canners to the Sacramento river article, because they contain more substance and not so much waste; but tomatoes are also grown in other parts of the county. Some of the tomato fields of Alameda county are very large, tracts of 100 acres not being uncommon. The time of the tomato harvest is between the 10th of August and the end of October, although frequently the crop is all in before the 1st of October. To secure the best land, if he is farming on rented land, the tomato grower must pay from \$16 to \$20 an acre, while a fair price for the product is \$7.50 per ton, and

the yield is about twelve tons to the acre. A large grower will ship three carloads, twenty tons to the car, each night. Frequently seventy or eighty pickers will be employed on a single ranch.

**POTATOES.**—The potato crop is one of increasing importance, since it has been found that there is big money in producing the big Burbank potatoes and other commercial varieties. The best soil will produce from seventy-five to eighty sacks to the acre, although in former times record yields of 150 sacks to the acre were produced.

**PEAS.**—The growing of peas for canning purposes has assumed importance within a comparatively recent period, which is due to the circumstance that the canning syndicate (which operates on the plan of specialties, putting up in each of its canneries the products which are grown best in that particular locality) has made this the pea-canning center. As giving an idea of the importance it has assumed, it may be mentioned that when an Enquirer representative visited the San Leandro factory the other day it was canning peas at the rate of 1200 cases per day. Each case contains twenty-four cans, and this makes a daily pack of 28,800 cans. As the season lasts about thirty days, many hundred thousand cans are put up before operations are stopped. This same cannery, which is one of the largest in the syndicate, put up a tomato pack last year of 67,000 cases.

**RHUBARB.**—One of the prosperous agricultural industries of Alameda county is the growing of rhubarb for the California and Eastern markets. Until a comparatively recent date the local market was the only one supplied, but about seven years ago experimental shipments were made to the East, and since then this branch of the business, after various ups and downs, has become an important one, with a large increase in the acreage as a consequence. At the present time 500 acres of the best land the sun shines on are devoted to the cultivation of the rhubarb plant. San Leandro is the center of the industry, and it is there that a success in the business of Eastern shipping has been worked out. One of the leading factors in the business has been Daniel McCarthy, editor of the Reporter.

During last spring the shipments of rhubarb to markets beyond the mountains—or, to be specific, to Chicago, since that is the only rhubarb market which is a paying one up to this time—were more profitable than in any former year, and as a consequence about 200 acres have been added to the area formerly cultivated. Twenty carloads were shipped this year, each car containing 560 boxes. The boxes weighed about forty-two pounds each and the shippers received a profit of something over \$1 per box, net. The San Francisco shipments, although larger in amount, were not quite so profitable; but the home and foreign shipments taken together averaged a net return of a dollar.

The shipments to San Francisco are about fifty carloads a year. It is a rather remarkable circumstance that the San Francisco markets appear able to stand a carload per day, while one carload in two or three days in the East is as much as the markets will absorb. When the plant sells at such a rate that it will net \$1 per box, the profits are large. It will pay 10% interest on land worth \$1000 per acre. The vegetable land around San Leandro is not worth quite \$1000 per acre, but it has sold as high as \$700, and recently \$500 per acre has been refused by owners of choice land.

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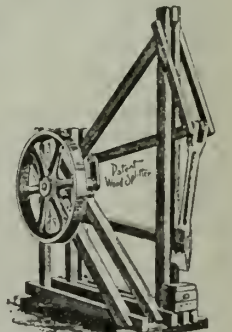
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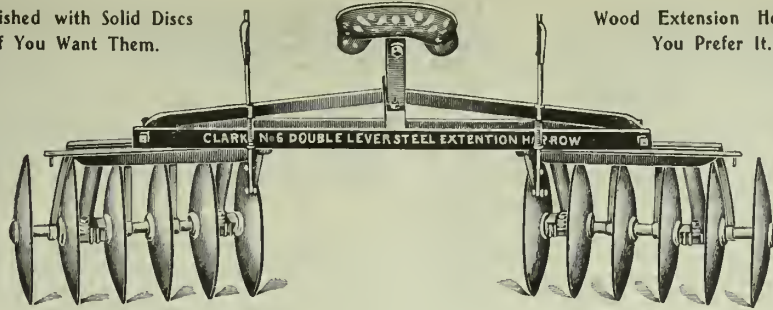
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ch. m.	1885	Anselma 2:29 1/4	Ansel 2:20	Elaine 2:30	Monbells 2:23 1/4
b. m.	1896	Asombrosa	Azmoor 2:20 1/4	Ahwaga	Mendocino 2:19 1/4
br. m.	1890	Bell Bird 2:22	Electioneer	Beautiful Bells 2:29 1/4	Iran Alto 2:12 1/4
b. m.	1898	Cecino	Mendocino 2:19 1/4	Cecil	Exioneer
b. m.	1887	Clarion 2:25 1/4	Ansel 2:20	Consolation	Mendocino 2:19 1/4
br. m.	1896	Clarionette	Dexter Prince	Clarion 2:25 1/4	Mendocino 2:19 1/4
b. m.	1897	Coralia	Roodie 2:12 1/4	Coral 2:18 1/4	Monbells 2:23 1/4
b. m.	1892	Corsica	Dexter Prince	by Corsican	Exioneer
b. m.	1881	Ella 2:29	Electioneer	Lady Ellen 2:29 1/4	Nutwood Wilkes 2:16 1/4
ch. m.	1882	Elsie	General Benton	Elaine 2:30	McKinney 2:11 1/4
bl. m.	1895	Giacinta	Guy Wilkes 2:15 1/4	Sproule	Azmoor 2:20 1/4
b. m.	1884	Lady Agnes	Electioneer	Lady Lowell	Exioneer
b. m.	1880	Lady Nutwood 2:34 1/4	Nutwood 2:18 1/4	Lady Mac	Mendocino 2:19 1/4
bl. m.	1888	Ladywell 2:16 1/4	Electioneer	Lady Lowell	Monbells 2:23 1/4
ch. m.	1883	Laura Drew	Arthurton	Molly Drew 2:27	Mendocino 2:19 1/4
ch. m.	1887	Lena	Dexter Prince	Lena R.	Mendocino 2:19 1/4
bl. m.	1888	Lilly Thorn	Electioneer	Lady Thorn Jr.	Exioneer
b. m.	1881	Morning Glory	Electioneer	Marti	Exioneer
b. m.	1881	Nellie Benton 2:30	General Benton	Norma	Monbells 2:23 1/4
b. m.	1898	Ororese	Ora Wilks 2:11	Melrose	Mendocino 2:19 1/4
bl. m.	1892	Sabling	Guy Wilkes 2:15 1/4	Sable	Iran Alto 2:12 1/4
gr. m.	1885	Sonoma 2:28	Electioneer	Sontag Mohawk	Exioneer
ch. m.	1891	Sylla Barnes	Whips 2:27 1/4	Barnes	Monbells 2:23 1/4
bl. m.	1887	Wildmay 2:30	Electioneer	May	Nazote 2:28 1/4
bl. m.	1897	Zorilla	Dexter Prince	Lilly Thorn	Exioneer

Color & Sex	Foaled	NAME.	SIRE.	DAM.
b. s.	1882	Azmoor 2:20 1/4	Electioneer	Mamie O
br. g.	1898	Altower	Altivo 2:18 1/4	Wildflower (2) 2:21
ch. g.	1899	Menzle	Mendocino 2:19 1/4	Lizzie

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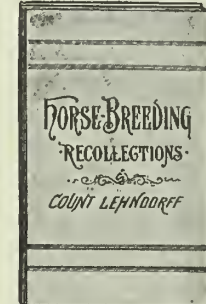


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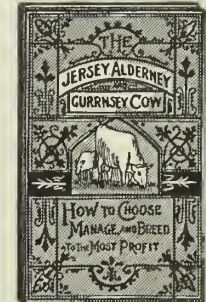
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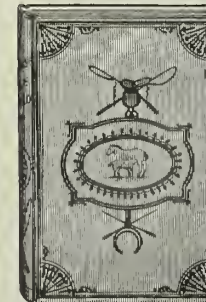
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## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, Jan. 22, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July
Wednesday.....	81½@80¾	81¼@80
Thursday.....	78¾@80¼	79 @80
Friday.....	79¾@80¾	79¾@80¾
Saturday.....	80¾@81	80¼@80¾
Monday.....	80¾@79¾	80¾@79
Tuesday.....	79¾@78¾	79¾@78¾

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday.....	45½@44½	40¾@39¾
Thursday.....	43¾@44¾	39 @39¾
Friday.....	44¾@45¾	39¾@40¾
Saturday.....	45¾@46¾	40¾@40¾
Monday.....	46¾@45¾	41 @40
Tuesday.....	46¾@45¾	40¾@39¾

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 08½@1 10½	@—
Friday.....	1 10½@1 09½	1 10½@—
Saturday.....	1 08½@1 09½	@—
Monday.....	1 08½@1 08½	1 10½@—
Tuesday.....	1 09 @1 09½	1 09½@—
Wednesday.....	1 09 @1 10½	@—

## WHEAT.

There has been no great activity in the local market for this cereal since last review. Figures asked were in the main above the views of buyers, and purchases were in consequence restricted in most, if not all instances, to immediate and pressing needs. Shippers have a lot of high-priced vessels on their hands, with the freight market weak and depressed, leaving them in anything but an enviable position. That the exporting firms have all the wheat necessary to load the chartered fleet now in port is not probable, but if they have enough they are in for losses on charters at any rate, although if they have the necessary wheat holdings, their losses on ships will likely prove lighter than if they were compelled to secure cargoes on the present market. The difference between the freight rates secured by the grain ships now in port and the figures which these same vessels would have accepted if no effort had been made to corner the freight market, is close to \$100,000 in favor of the ship owners and against exporters. The intention of shippers was of course to make wheat suffer for the forced advance in ocean freights, but the scheme failed to work as planned. Present prospects are that exporters will have to stand a large proportion of the losses brought about through crowding freight rates upward, and they have no one to blame but themselves.

California Milling.....	1 10 @1 12½
Cal. No. 1 shipping, alongside.....	1 07½@1 10
Oregon Valley.....	1 07½@1 10
Washington Blue Stem.....	1 07½@1 12½
Washington Club.....	1 05 @1 07½
Off qualities wheat.....	1 00 @1 05

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	6s4d@6s¼d	—s-d@—s-d
Freight rates.....	38¾@40s	28¾@29¾s
Local market.....	98¾@1 01½	1 07½@1 10

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.08½@1.10½.
December, 1902, delivery, \$1.09½@1.10½.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at —@—; May, 1902, \$1.09@1.10½.

## FLOUR.

While the market presents a moderately firm tone, there is no great amount of business to record at full current figures. The indications are not encouraging, however, for the flour market soon ruling any more favorable to the consuming interest. Present supplies could not now be replaced at the figures current in a wholesale way in the flour market. A steamer sailed this week from this port for the Orient with 60,082 barrels flour, 30,250 barrels having been taken on here, the balance brought from the North. This is the largest quantity of flour which has ever gone outward in one vessel from this point. Another cargo of 58,150 barrels, wholly San Francisco loading, was cleared from here for China yesterday.

Superfine, lower grades.....	\$2 40@2 50
Superfine, good to choice.....	2 60@2 90
Country grades, extras.....	3 15@3 35

Choice and extra choice.....	3 35@3 65
Fancy brands, jobbing.....	3 65@3 75
Oregon, Bakers' extra.....	2 90@3 25
Washington, Bakers' extra.....	2 90@3 40

## BARLEY.

Trade in this cereal has been rather slow the current week, especially in other than feed descriptions, but it has been the exception where buyers have been able to operate to any better advantage than in the early part of the month. Shippers have not been lately bidding any more than prices realized for good qualities of feed, but they have not been obtaining any barley worth mentioning. There is a very fair local demand for feed purposes, and is apt to be throughout the season, owing to the light supplies of other feed cereals and the high prices ruling for the same. The railroad has made a reduced rate of \$10 per ton on barley to Eastern points, and an improved demand is likely to result.

Feed, No. 1 to choice.....	83¾@ 86¾
Feed, fair to good.....	82¾@ 83¾
Brewing, No. 1 to choice.....	86¾@ 90
Chevalier, No. 1 to choice.....	92¾@ 1 00
Chevalier, poor to fair.....	82¾@ 85

## OATS.

Offerings are of very moderate volume. Most of the oats which have lately come forward represent deliveries on previous purchases. Values are being well sustained at the quoted range. Oregon and Washington oats cannot now be purchased at primary points and be laid down here at quotations.

White Oats, fancy feed.....	1 37¼@1 42¼
White, good to choice.....	1 30 @1 40
White, poor to fair.....	1 20 @1 27¼
Gray, common to choice.....	1 27¼@1 37¼
Milling.....	1 35 @1 42¼
Surprise, good to choice.....	1 37¼@1 42¼
Black Russian.....	1 10 @1 30
Red.....	1 15 @1 40

## CORN.

Stocks of all descriptions are of light proportions, and give promise of so continuing until next crop comes upon the market. Values remain at a high range, with yellow commanding better figures than white, being in the lightest supply. Even at the high prices lately current it has not been possible to profitably land Eastern corn in this center.

Large White, good to choice.....	1 40 @1 45
Large Yellow.....	1 45 @1 50
Small Yellow.....	1 55 @1 60

## RYE.

Immediate offerings are not particularly heavy and no undue pressure to realize is being exerted. Market moderately firm at the quotations.

Good to choice.....	85 @ 90
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## BUCKWHEAT.

Values remain close to those last noted, but market is quiet, no recent transfers of noteworthy dimensions having been reported.

Good to choice.....	1 50 @1 65
---------------------	------------

## BEANS.

Not many beans are arriving, nor is there any outward movement of consequence at present, prices East being rather lower relatively just now than here. The inquiry which has been experienced during the past week or two has been largely for Pinks and Bayos and has been partly speculative. The late advance in quotable rates for Pinks is being quite well maintained. There is no special selling pressure on beans of any variety.

Pea, fair to good, 100 lbs.....	3 50 @4 00
Small White, good to choice.....	3 00 @3 25
Lady Washington.....	2 90 @3 15
Pinks.....	2 10 @2 30
Bayos, good to choice.....	2 50 @2 85
Reds.....	2 50 @3 00
Red Kidney.....	3 50 @3 75
Limas, good to choice.....	4 50 @4 60
Black-eye Beans.....	3 50 @3 65
Garbanzos, large.....	2 00 @2 25
Garbanzos, small.....	1 25 @1 50

## DRIED PEAS.

Trade is of a light order, and if offerings were crowded upon the market it is doubtful if current quotations could be realized. Spot stocks at the moment are much larger of Green or Blue than of Niles Peas, but there is little inquiry for either kind.

Green Peas, California.....	1 50 @2 00
Niles Peas.....	1 75 @1 80

## WOOL.

Some of the scouring establishments are fairly busy on contracts entered into several months ago, but beyond this the market shows exceedingly quiet condition. Stocks in first hand have been worked down to quite small proportions, and include practically no wool which can be termed desirable. Values remain nominally as previously noted, with prospects favorable for an active demand for all good to choice wools of coming clip at tolerably stiff figures.

## SPRING.

Southern, defective, 7 mos.....	7 @ 8
Oregon Valley, fine.....	14 @15

Oregon Valley, coarse to medium.....	12 @13
Eastern Oregon, choice.....	11 @13
Eastern Oregon, fair to good.....	9 @10
Nevada, as to condition.....	10 @12

## FALL.

Humboldt and Mendocino.....	11 @12
Northern Mountain, free.....	9 @10
Northern Mountain defective.....	8 @ 9
Middle Counties.....	8 @10
San Joaquin and Plains.....	6½@ 8½
San Joaquin Lambs.....	7½@ 9

## HOPS.

Despite very limited offerings from first hands, prices show no quotable improvement. To realize 12c in a wholesale way is about impossible, and bids up to 11c by large operators are made only on very desirable lots. A shipment of 23,500 lbs. was made the past week per steamer to Australia.

Good to choice, 1901 crop.....	10 @12
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## HAY AND STRAW.

Prices for hay have been without quotable change since last review, but the general tone of the market has not been so strong as preceding week, owing to the weather having been a little more favorable for coming crop. That the market will develop any material weakness in the near future, however, is not probable. Current values for straw are being well maintained, under light offerings.

Wheat, good to choice.....	9 00@13 00
Wheat and Oat.....	9 00@12 00
Tame Oat.....	7 50@10 50
Wild Oat.....	7 00@ 9 50
Barley.....	7 00@ 8 50
Alfalfa.....	9 00@10 00
Clover.....	6 00@ 8 00
Compressed.....	9 00@13 00
Straw, ½ bale.....	40 @ 50

## MILLSTUFFS.

Market for all descriptions of mill offal is showing an easier tone, with stocks on the increase and demand less brisk. Values for Rolled Barley and Milled Corn are without radical change.

Bran, ½ ton.....	18 00@19 00
Middlings.....	20 00@22 00
Shorts, Oregon.....	18 50@19 50
Barley, Rolled.....	18 50@19 50
Cornmeal.....	32 00@33 00
Cracked Corn.....	31 50@32 00

## SEEDS.

Business in the kinds quoted herewith is not brisk. Quotable values remain without appreciable change and are based mainly on asking figures. Brown or Trieste Mustard is still in fair supply, but there is not much Yellow offering.

	Per ctt.
Alfalfa, Cal.....	7 25@ 7 50
Alfalfa, Utah.....	8 25@ 8 75
Flax.....	2 40@ 2 60
Mustard, Yellow.....	3 25@ 3 50
Mustard, Trieste.....	2 85@ 3 00
	Per lb.
Canary.....	3¼@ 3½
Rape.....	1¼@ 2¼
Hemp.....	3¼@ 3½

## BAGS AND BAGGING.

This market is showing the same inactive condition as for some weeks past. Some Grain Bags are already en route from Calcutta for the coming season, and subsequent shipments of considerable magnitude have been already arranged for. While the Grain Bag market presents an easy tone, asking rates for futures show no change.

Calcutta Grain Bags, buyer June-July.....	6 @ 6¼
Calcutta Grain Bags, spot.....	6¼@—
San Francisco Grain Bags, 22x36, spot.....	@—
Wool Sacks, 4 lbs.....	3½ @36
Wool Sacks, 3½ lbs.....	32 @33
Fleece Twine.....	8¼@—
Gunnies.....	@—
Bean Bags.....	5¼@ 5½
Fruit Sacks, cotton, three sizes.....	5½, 6, 6¼
Fruit Sacks, Jute.....	7 @ 7¼

## HIDES, PELTS AND TALLOW.

There is a fair demand for Hides and the market for sound stock is moderately firm at the rates quoted. Pelts are selling at practically unchanged values, but market cannot be termed firm, arrivals being rather large. Tallow is commanding as a rule full current rates, being in good request.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @—	9¼@—
Medium Steers, 48 to 56 lbs.....	10 @—	8¼@—
Light Steers, under 48 lbs.....	9 @—	8 @—
Heavy Cow Hides, over 50 lbs.....	9 @9¼	8¼@—
Light Cow Hides, under 50 lbs.....	9 @—	8 @—
Stags.....	6 @7	@—
Wet Salted Kip.....	9 @9¼	8 @—
Wet Salted Veal.....	9 @9¼	8 @—
Wet Salted Calf.....	10 @—	9 @—
Dry Hides.....	16 @16½	14 @—
Dry Kip and Veal, 11 to 16 lbs.....	14 @—	12 @—
Dry Kip, under 4 lbs.....	19 @—	16 @—
Salted Horse Hides, large.....	2 75 @—	@—
Salted Horse Hides, medium.....	2 25 @—	@—
Salted Horse Hides, small.....	1 50 @—	@—
Dry Horse Hides, large.....	1 75 @—	@—
Dry Horse Hides, small.....	1 25 @—	@—
Dry Colts' Hides.....	50 @—	@—
Pelts, long wool, ½ skin.....	75 @—	@1 00

Pelts, medium, ½ skin.....	50 @ 70
Pelts, short wool, ½ skin.....	30 @ 40
Pelts, shearing, ½ skin.....	15 @ 30
Deer Skins, best summer.....	35 @—
Deer Skins, good medium.....	— @ 30
Deer Skins, thin winter.....	— @ 2½
Elk Hides.....	10 @ 12
Tallow, good quality.....	5¼ @—
Tallow, No. 2.....	4¼ @—
Goat Skins, perfect.....	30 @ 37½
Goat Skins, small.....	10 @ 20
Kid Skins.....	5 @ 10

## HONEY.

Market continues quiet, but is tolerably firm, particularly for choice to select. Spot stocks are of rather small volume, and there are no evidences of much being left in the interior. There is some probability of prices hardening slightly during the next few months, particularly if the Spring trade proves to be of good average proportions.

Extracted, White Liquid.....	5¼@ 6
Extracted, Light Amber.....	4¼@ 5
Extracted, Amber.....	4 @—
White Comb, 1½ frames.....	11 @12½
Amber Comb.....	8 @10
Dark Comb.....	6 @ 7

## BEESWAX.

Values are being well maintained, with offerings light. There is a good demand, mainly for shipment.

Good to choice, light, ½ lb.....	20 @28
Dark.....	24 @25

## LIVE STOCK AND MEATS.

Beef is in fair supply and is selling at slightly lower figures than preceding week, market lacking firmness. Mutton is arriving rather freely as compared with the demand, but quotable values have not suffered any marked decline. Choice Lamb is scarce and high. Veal is not arriving in heavy quantity. Hogs in desirable condition are being favored with prompt custom and a steady market.

Beef, first quality, dressed, net ½ lb.....	7 @ 7¼
Beef, second quality.....	7 @—
Beef, third quality.....	6 @ 6½
Mutton—ewes, 7@7¼c; wethers.....	7¼@ 8
Hogs, hard grain fed, 150 to 250 lbs.....	5½@ 6
Hogs, small, fat.....	5½@ 6
Hogs, large, hard, over 250 lbs.....	5½@ 6½
Hogs, country dressed.....	6½@ 7
Veal, small, ½ lb.....	8 @ 9¼
Veal, large, ½ lb.....	8 @ 8¼
Lamb, spring, ½ lb.....	11 @—

## POULTRY.

The market has been exceedingly quiet most of the week under review, and has been in the main lacking in firmness. With Eastern Chickens selling here as low as \$3 50 per dozen, it is not surprising that the market for California poultry is displaying no noteworthy strength. The inquiry which existed was largely for choice young stock—Fryers and Broilers in fine condition—the same selling to best advantage, although not commanding as stiff prices as were realized earlier in the month. Young Pigeons were in light receipt and brought good figures.

Turkeys, dressed, choice.....	16 @ 18
Turkeys, alive, Hens, ½ lb.....	14 @ 15
Turkeys, alive, Gobblers, ½ lb.....	13 @ 14
Hens, California, ½ dozen.....	4 00 @5 00
Roosters, old.....	4 00 @4 50
Roosters, young (full-grown).....	4 00 @5 00
Fryers.....	4 00 @4 50
Broilers, large.....	3 50 @4 00
Broilers, small to medium.....	2 50 @3 00
Ducks, old, ½ dozen.....	4 00 @5 00
Ducks, young, ½ dozen.....	6 00 @7 00
Geese, ½ pair.....	1 50 @1 75
Goslings, ½ pair.....	2 00 @2 25
Pigeons, old, ½ dozen.....	1 50 @—
Pigeons, young.....	2 50 @2 75

## BUTTER.

Market was moderately firm for fresh butter, especially for choice to select, with no heavy offerings and demand sufficient to prevent any noteworthy accumulations of desirable qualities. Some favorite marks of both creamery and dairy butter went to special custom at an advance on quotable rates. Sales of select creamery were made up to 27c in a small way.

Creamery, extras, ½ lb.....	25 @—
Creamery, firsts.....	23 @24
Creamery, seconds.....	20 @21
Dairy, select.....	22 @23
Dairy, firsts.....	19 @20
Dairy, seconds.....	16 @—
Mixed store.....	13 @14
Creamery in tubs.....	19 @21
Pickled Roll, ½ lb.....	@—
Parkin, California, choice to select.....	@—
Parkin, common to fair.....	@—

## CHEESE.

Choice mild-flavored new is not in large stock and is meeting with a tolerably firm market, some sales being effected above quotations, but there is no scarcity of old or well-seasoned cheese. Market for latter sort is not quotably lower, but inclines in favor of buyers.

California, fancy flat, new.....	11¼@12
California, good to choice.....	10¼@11¼
California, fair to good.....	10 @10¼
California, "Young Americas".....	11¼@12¼

## EGGS.

Further sharp declines have been experienced in values in the egg market. No special stability is looked for until prices



get down to a packing basls. Some shipping trade may be developed during the next few months, however, at materially better prices than will be obtainable on packing or speculative account. There has been already some inquiry from outside points, but mainly at lower figures than have been ruling.

California, select, large, white and fresh. 21 @—  
California, select, irregular color & size. 20 @—  
California, good to choice store. 18 @20  
California, common to fair store. @—  
Eastern, good to choice. @—  
Cold Storage. @—

## VEGETABLES.

Fresh vegetables continue in light receipt and where quality was all right no trouble was experienced in realizing good figures. Some peas and tomatoes which were in defective condition dragged at comparatively low prices. Onions which were hard and sound were held at an advance, with market firm at the current figures.

Beans, String, # lb. 10 @ 15  
Beans, Wax, # lb. 12 1/2 @ 15  
Cabbage, choice garden, # 100 lbs. 40 @—  
Cauliflower, # dozen. 50 @ 50  
Cucumbers, Bay, # large box. @—  
Egg Plant, Los Angeles, # lb. 15 @ 20  
Garlic, # lb. 2 @ 3  
Mushrooms, # lb. @—  
Onions, Yellow Danver, # cental. 1 50 @2 00  
Peas, Sweet garden, # lb. 3 @ 5  
Peppers, Green, Los Angeles, # lb. 20 @ 25  
Peppers, Bell, # box. @—  
Rhubarb, # lb. @—  
Squash, Marrowfat, # ton. 8 00 @10 00  
Summer Squash, # box. 1 00 @ 1 25  
Tomatoes, Los Angeles, # box. 1 25 @ 1 75

## POTATOES.

Stocks and offerings are of fairly liberal volume, but are mostly in second hands and are being firmly held. Oregon and Washington potatoes are arriving at the rate of 10,000 to 15,000 sacks per week, these receipts being fully up to or larger than the arrivals from all other points. Especially is the market for choice to select qualities unfavorable to buyers. Sweet potatoes were not offered in heavy quantity and best qualities met with a tolerably firm market.

Burbanks, Salinas, # 100 lbs. 1 40 @ 1 75  
River Burbanks in sacks, # cental. 1 10 @ 1 30  
Petaluma and Tomales Burbanks. 1 25 @ 1 50  
Oregon Burbanks. 1 30 @ 1 65  
River Reds. 1 40 @ 1 60  
Sweets, Merced, # cental. 1 15 @ 1 25

## The Fruit Market.

## FRESH FRUITS.

In the line of fresh deciduous fruits Apples are the only representative on market at present. For Apples of choice to select quality the market continues firm, the quotable range remaining practically as last noted, but common qualities are not eagerly sought after and fail to bring very good figures, although not in heavy stock. There were fair receipts this week from Humboldt county, mostly of medium quality, but arrivals aside from above were of rather light proportions.

Apples, fancy, # 4-tier box. 1 75 @ 2 00  
Apples, good to choice, # 50-lb. box. 1 00 @ 1 50  
Apples, common to fair, # 50-lb. box. 50 @ 75

## DRIED FRUITS.

While business in cured and evaporated fruits cannot be termed active, there is a very fair amount of trade, considering the limited offerings, the strong tone prevailing, and the time of year. Peaches have received more than ordinary attention the past week, and market for this fruit is particularly strong for all desirable qualities. There are no heavy offerings of Apricots, Apples, Pears or Plums, and to purchase freely of any sort would be difficult, even at higher figures than are warranted as quotations. That remaining stocks will be practically closed out in the spring months is altogether probable. Prune market is showing decided steadiness, there being no disposition to crowd offerings to sale at less than full current rates. Especially is this the case in regard to Prunes of last year's crop, which are held on the 3 1/2 @ 3 3/4 c. basis for the four sizes, latter figure for Santa Claras. Old Prunes are quotable about 1/2 c. less than new, and market not particularly strong for latter. But the present limited holdings of new Prunes make it altogether probable that all stocks of new and old will be completely closed out before the opening of the coming season.

## EVAPORATED OR BLEACHED.

Apricots, Royal, prime. 8 @ 8 1/2  
Apricots, Royal, choice, in sacks, # lb. 8 1/2 @ 9  
Apricots, Moorpark. 10 @ 12  
Apples, in 50-lb boxes, rings, pressed, fancy. 8 @ 8 1/2  
Apples, 50-lb boxes, rings, pressed, good to choice. 6 1/2 @ 7 1/2  
Nectarines, # lb. 5 @ 6  
Peaches, unpeeled, fancy. 8 @ 9  
Peaches, unpeeled, choice. 8 1/2 @ 7 1/2  
Peaches, peeled, in boxes. 12 @ 14  
Pears, halves, choice to fancy. 6 1/2 @ 8 1/2  
Plums, Red and Black, pitted. 5 1/2 @ 6 1/2  
Plums, White and Yellow. 5 1/2 @ 6 1/2

Prunes, 4 sizes, in bags, 3 1/2 @ 3 3/4 c; 50-60s, 4 1/2 @ 4 3/4 c;  
60-70s, 4 @ 4 1/4 c; 70-80s, 3 3/4 @ 3 3/4 c; 80-90s, 3 1/4 @—;  
90-100s, 3c @—; these figures for 1901 crop.  
COMMON SUN-DRIED.

Apricots. 7 @ 7 1/2  
Apples, sliced. 3 @ 5  
Apples, quartered. 3 1/2 @ 4 1/2  
Peaches, unpeeled. 4 1/2 @ 6  
Pears, prime halves. 4 1/2 @ 5  
Plums, unpitted, # lb. 1 1/2 @ 2 1/2

## RAISINS.

The Growers' Association has withdrawn all quotations. Stocks are of too light volume to admit of any noteworthy wholesale trading. The market is strong in tone, jobbers asking a moderate advance on figures lately prevailing, and are only accommodating buyers in a limited way as they put in an appearance, instead of hunting up custom.

## CITRUS FRUITS.

Oranges have been in fairly liberal supply, with demand slow most of the week, causing the market to rule in favor of buyers, values being at a little lower range than last quoted. Figures below given are based on jobbing prices. Sales at auction were mainly within range of \$1.50 @ 2.25 for best Navel and 90c @ \$1.25 for common grades. Lemons were in fair supply and in limited request, with sales at generally unchanged figures. Limes were held as last quoted, with movement light.

Oranges—Navels, # box. 1 25 @ 2 75  
Seedlings, # box. 50 @ 1 00  
Tangerines, # box. 75 @ 1 50  
Lemons—California, select, # box. 2 25 @ 2 50  
California, good to choice. 1 50 @ 2 00  
California, common to fair. 75 @ 1 25  
Grape Fruit, # box. 1 25 @ 2 00  
Limes—Mexican, # box. 5 00 @ 5 50

## NUTS.

Almonds are offering in a moderate way by jobbers, but are practically out of first hands. Quotable values remain as last noted. Prices for Walnuts are not quotably higher, but stocks are nearly exhausted in both first and second hands. Peanuts are not in heavy supply and are being steadily held.

California Almonds, shelled. 15 @ 18  
California Almonds, paper shell, # lb. 10 @ 12  
California Almonds, soft shell. 8 @ 9  
California Almonds, hard shell. 5 @ 6  
Cal. White Walnuts, No. 1 soft shell. 9 @ 9 1/2  
Cal. White Walnuts, No. 2 soft shell. 7 @ 8  
Cal. White Walnuts, No. 1 hard shell. 7 1/2 @ 8 1/2  
Cal. White Walnuts, No. 2 hard shell. 6 @ 7  
Peanuts, California, fair to prime. 4 1/2 @ 5 1/2  
Peanuts, Eastern, hand-picked. 5 1/2 @ 6  
Pine Nuts. 5 @ 6

## WINE.

The market for wines of last year's vintage is not showing much activity. There is some display of samples from growers, however, soliciting bids from dealers. The question of taxes which attach in March is cutting some figure, buyers sparing no pains to take advantage of the same in bearing the market. Any special pressure to realize during the next thirty days may result in inclining the market temporarily in favor of dealers, although no pronounced break in values is looked for. The quotable range wholesale for dry wines of 1901 may be said to be 22 @ 26c. per gallon, with asking rates in most instances 3 @ 4c. above the figures quoted.

## Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks. 262,340	3,874,133	3,701,295
Wheat, centals. 273,500	5,594,427	4,023,487
Barley, centals. 47,432	4,623,655	2,653,937
Oats, centals. 9,777	685,863	462,961
Corn, centals. 2,142	60,754	74,640
Rye, centals. 1,145	113,815	98,192
Beans, sacks. 12,251	546,785	486,411
Potatoes, sacks. 35,149	900,634	986,710
Onions, sacks. 1,916	151,127	132,700
Hay, tons. 2,493	90,126	103,734
Wool, bales. 1,335	42,663	22,343
Hops, bales. 121	6,963	6,426

## EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks. 62,848	2,590,714	2,098,040
Wheat, centals. 279,841	5,139,655	3,810,733
Barley, centals. 6,270	3,526,952	1,596,198
Oats, centals. 1,145	2,120	46,979
Corn, centals. 106	8,701	2,269
Beans, sacks. 106	19,148	9,576
Hay, bales. 207	6,399	82,140
Wool, pounds. 23,806	522,731	233,621
Hops, pounds. 23,806	466,023	434,025
Honey, cases. 2,383	5,503	1,642
Potatoes, pack's. 2,383	34,264	70,113

## California Dried Fruit at New York.

NEW YORK, Jan. 22.—Evaporated apples, common, 7 @ 8 1/2 c; prime wire tray, 9 1/2 @ 9 3/4 c; choice, 9 1/2 @ 10c; fancy, 10 1/2 @ 11c.  
California Dried Fruits.—Trade is not brisk, but offerings are light and prices are well maintained.  
Prunes, 3 1/2 @ 7c.  
Apricots, Royal, 9 1/2 @ 13c; Moorpark, 10 @ 14c.  
Peaches, unpeeled, 7 1/2 @ 10c; peeled, 16 @ 18c.

## New Patents.

DEWEY, STRONG & Co.'s SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING JAN. 7, 1902.

690,630.—ROCK DRILL—A. C. Bates, S. F.  
690,819.—DECORATING GLASS—H. L. von Bonhorst, Los Angeles, Cal.  
690,556.—FIRE EXTINGUISHER—J. H. Britton, Los Angeles, Cal.  
690,834.—FRUIT DRIER—W. A. Cates, Fisher, Wash.  
690,837.—NEWSPAPER HOLDER—J. Conzett, Fortuna, Cal.  
690,566.—FLY TRAP—Drake & Semple, Modesto, Cal.  
690,647.—RATCHET WRENCH—W. T. Garrett, Cedarville, Cal.  
690,855.—WEIGHING APPARATUS—Greene & Chisholm, S. F.  
690,857.—BRICK MAKING MACHINERY—H. Hannl, Portland, Or.  
690,551.—TELEPHONE—H. I. Hauxhurst, Oakland, Cal.  
690,574.—ROASTING PAN—J. Herbs Redlands, Cal.  
690,576.—FUNNEL—W. A. Hesse, Alameda, Cal.  
690,584.—NORIA—D. Hutton, Quartette, Nev.  
690,593.—CAN HEADING MACHINE—A. W. Livingston, Alameda, Cal.  
690,865.—GRAFTING TOOL—D. A. Manuel, Callotoga, Cal.  
690,753.—BAG LIGHTING DEVICE—W. W. McCormick, Santa Rosa, Cal.  
690,772.—TYPE WRITER PAD—R. E. Revalk, S. F.  
690,667.—GATE—W. R. Snyder, Puyallup, Wash.  
690,668.—SAW JOINTER—D. W. Solomon, Arlington, Wash.  
690,806.—COIN HOLDER—J. Williams, Oakland, Cal.  
35,549.—DESIGN—A. Hunter, S. F.

## Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

FLY TRAP.—No. 690,566. Z. E. Drake and J. C. Semple, Modesto, Cal. This trap consists of a cage and receiver and a base upon which it is located, a horizontally revolvable table has its axis so disposed that the periphery of the table passes into the cage or receiver during its revolution and a brush therein removes the flies from the table before it again emerges to the outside. The upper part of the cage is so disposed that the flies will crawl upwardly into it and cannot again get out, and they can then be removed and destroyed.

BAG OR SATCHEL LIGHTING DEVICE.—No. 690,753. Jan. 2, 1902. W. W. McCormick, Santa Rosa, Cal. This device comprises a light of any suitable character, such as an electric bulb, which is confined within a case having an exterior glass or bullseye in a corresponding opening in the bag or satchel, and a reflector may be placed behind the light so as to throw it strongly outward through the bullseye or other lens. Within the bag and conveniently located is a battery by which the electrical current is produced and a switch located near the handle of the bag is movable so as to connect or disconnect the conductors and complete or break the circuit at pleasure.

AUTOMATIC CAN HEADING MACHINE.—No. 690,593. Jan. 2, 1902. A. W. Livingston, Alameda, Cal. The object of this invention is to rapidly and accurately apply the heads to cans, and it consists of conveyors by which the heads and bodies are separately introduced into the machine, the heads placed upon the bodies and means for seating the heads and bodies, which means include a revolving table having revolvable guides or spiders around the periphery upon which the can bodies are held and the can bodies are received and centered upon the bodies the whole being then advanced to rollers upon swinging arms which are caused to contact against the flange of the can head so as to seam it upon the can body.

WEIGHING AND RECORDING APPARATUS.—No. 690,855. Jan. 7, 1902. Wm. Green and S. Chisholm, San Francisco, Cal. This apparatus is designed for weighing purposes. It consists of a weight, a motor, means intermediate by which the weight is caused to move along the scale beam until it arrives at a point where the weight is counterbalanced and the beam sinks, and electrical contacts through which the current passes to drive the motor, one of which contacts is broken by the sinking of the beam so that the balance weight stops at a point indicating the amount.



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## Shriveled Olives and Plump Compliments.

To THE EDITOR:—Referring to the olive question, I want to say that, to outward appearances, drouth-shriveled and frozen olives look exactly alike. One branch on a large olive tree may be overloaded and the fruit shriveled for want of moisture, while the remainder of the fruit may and often does present a plump appearance. But let the mercury sink low enough, and in one night the whole crop will be creased and shrunken.

In renewing my subscription, I want to compliment the editor on the ability and judgment displayed in answering all sorts of questions. To the discerning reader the improvement over former and earlier years is very marked. Once it was almost the rule for the editor to appeal to his readers for an answer. Then, too, the PACIFIC RURAL PRESS answers to queries display a dignity and conservatism that is in marked contrast to the flippant and feeble answers that are often given in other fruit journals. As long as our editor is drawing the straightest and best furrow in the whole field, there is no reason why he should look back or stop to explain. These compliments might be left till we meet in another world; but, on the other hand, there may be excellent reasons for acting on the saying, "What thou hast to do, do quickly." L. J. HARBISON.

Vacaville, Cal.

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  - IV. The Wild Fruits of California.
  - V. California Mission Fruits.
  - VI. Introduction of Improved Fruit Varieties.
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## ARBORICULTURE.

### Frost Fighting and Frost Resistance in Florida.

Mr. G. L. Taber of Glen St. Mary, Florida, sends us an interesting account of his experience with frost fighting and of the hardness of the Satsuma orange (here widely known as Vushiu), as follows:

We had a week of very severe weather, and for four nights were up all night with a force of men looking after such tender trees as needed protection. We burnt wood among the most tender sorts of oranges upon sour stock, and also "fired" a five-acre grove from which the fruit has not yet been picked. We accomplished all we set out to do, and saved the fruit on the trees unharmed. Subsequent developments prove that the fires would not have been absolutely necessary in the groves except to save fruit. The orchard trees came through comparatively unharmed, even where they were not fired.

In our twenty-five acres of Satsuma grove we burnt no wood, although in a portion of it wood had been placed to fire if necessary. Our previous experience with this variety had been such as to convince us that firing was entirely unnecessary as far as they were concerned, and this view of the case proved to be correct. The Satsumas on Trifoliata stock came through looking as bright and fresh as if no freeze had ever occurred, and without any loss of foliage. The Satsumas on sweet stock showed curled foliage for a few days, but this has now opened out and the trees will not drop more than 5% or 10% of their leaves. Over and over again we have had this same experience with Satsuma—that it withstands severe freezes better than any other variety, and is by all odds the safest variety to plant in localities subject to frequent freezes. We have this year marketed a fine crop of Satsumas for which we have obtained fancy prices.

**THE TRIFOLIATA STOCK.**—It may be of interest to state that more than three-quarters of my fruit which took first premium at the State Fair was grown upon trees budded upon Citrus trifoliata stock. I do not by any means make the claim that the Citrus trifoliata is the best for all sections, but I do claim, and my years of experience bear out the prediction that Citrus trifoliata will become much more largely used as a stock in a few years than it is now. Its desirability for sections subject to frequent severe cold is making itself more and more apparent. Trees upon Citrus trifoliata, if well banked in the fall, even if frozen to the bank occasionally, will send up new shoots and produce a crop from the new tops much quicker than trees budded upon any other stock.

During the past summer we published an article showing how oranges on sour and Trifoliata stocks side by side, were showing up and giving a tabulated statement of the height and

breadth of trees and average number of fruit on the trees of each of the twenty-three varieties upon which the test is being made. A recapitulation of those figures shows that of the twenty-three varieties thirteen on our stock failed to hold any fruit this year, while on Citrus trifoliata the whole twenty-three varieties had fruit on them. The average number of fruit on the whole number of trees on sour stock was thirteen, and the average number of fruit on trees on Citrus trifoliata was fifty-seven. This test orchard is yet young, having been planted in March, 1899, but it is a very interesting object of investigation to those interested in orange culture.

## Patrons of Husbandry.

Selma Grange.

TO THE EDITOR:—The Selma Grange celebrated the Order's anniversary at Masonic Hall Saturday in a delightful as well as appropriate manner. The session was adjourned at noon for the banquet, after which toasts were given as follows: "Objects of the Order," O. L. Abbott; "The Gentlemen of the Grange," Mrs. W. J. Zimmerman; "The Ladies of the Grange," J. J. Roadhouse; "The Children of the Grange," Mrs. Eliza Ralston; "Retrospect," Mrs. L. K. Roadhouse. After speech-making the following officers were elected to serve for one year: Master, D. B. Vanderburg; Overseer, T. B. Smith; Steward, J. J. Obert; Lecturer, Mrs. Roadhouse; Assistant Steward, M. C. Brown; Chaplain, Mrs. O. L. Abbott; Secretary, W. J. Zimmerman; Treasurer, Mrs. M. C. Brown; Gate Keeper, C. N. Cutler; Ceres, Mrs. W. J. Zimmerman; Pomona, Mrs. C. N. Cutler; Flora, Mrs. D. B. Vanderburgh; Lady Assistant Steward, Mrs. J. J. Obert; Trustee, F. B. Smith.

At the conclusion of the session the following resolution was adopted and ordered published:

WHEREAS, The Board of Supervisors of Fresno county, through the influence of Messrs. Scott, Burleigh and Martin, have constructed a good road from Fresno to Selma; and, Whereas, Said Board contemplates continuing said road to Kingsburg; therefore, Selma Grange heartily commends the course pursued by said Board and takes this method of showing its appreciation of the same.

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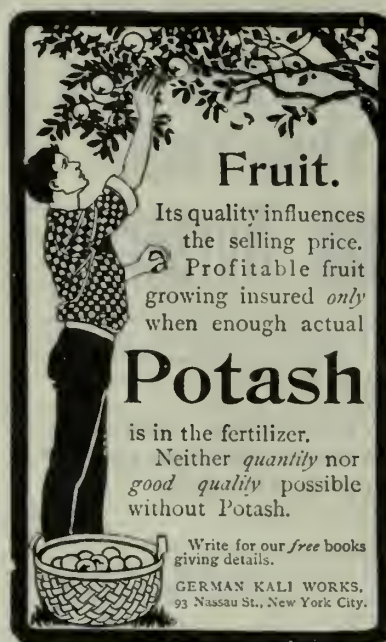
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## THE FIELD.

## Poisoning Gophers.

Although we have had frequent dissertations on poisoning gophers and most Californians know how to do it and have favorite ways of their own, the newer readers of the PACIFIC RURAL PRESS may find some helpful suggestions in the advice given by D. E. Lantz of the Kansas Experiment Station. He says: Pocket gophers are easily poisoned. They are very fond of common potatoes, sweet potatoes, apples, raisins and prunes. The presence of strychnine, arsenic, or other poisons does not seem to deter them from eating the food; but if the poison is sweetened they seem to eat it more readily. In summer it may be desirable to take the trouble to sweeten the poison, but in the fall and early spring it does not seem worth while to do this. The poisoned food being introduced to the burrows below the surface, there is no danger of poisoning stock. It might be well, however, not to let swine run in the alfalfa fields for a time after the poison has been put out.

The following method of introducing the poison is recommended: Cut the potato, or other food, into pieces not more than three-fourths of an inch in diameter. Cut a slit in each piece and with a point of the knife blade insert a little sulphate of strychnine; as much as half the bulk of a grain of wheat will answer the purpose. The moisture

from the potato will cause the poison to adhere to the blade.

Having prepared the bait in sufficient quantity, go to the field armed with a round, sharp-pointed implement an inch or an inch and a half in diameter and of sufficient length. The writer has a shovel handle and a spade handle, and each is shod with a conical iron point. A bracket piece is attached about 15 inches from the point to enable the operator to use the foot in pressing it into the soil. These tools have proved to be quite serviceable. With one of them it is only necessary to find the runway of the gopher. The handle is sufficiently thick to make a hole large enough to permit one to drop the poisoned potato directly into the burrow. The operator then passes on to another place, leaving the hole open. No digging with a spade or other hard labor is necessary. An experienced person can distribute poison to many acres of alfalfa in a day; and if proper care is taken to rightly distribute the bait, it will not be necessary to go over the ground a second time.

Some experience is required to enable one to find the burrows quickly. It is best to insert the food as near as possible to the freshest mounds of earth thrown up by the animals. Two or three pieces of potato at that place are worth many scattered in other parts of the runway. The operator should avoid the larger mounds and those that are not freshly made.

## Palo Alto Sale.

On the 30th inst. Palo Alto will offer for sale thirty head of the choicest brood mares on their farm, at the Occidental Horse Exchange, San Francisco. The fact that these mares are from the Palo Alto farm, bred and safe in foal to such stallions as Monbells 2:23½, Mendocino 2:19½, Iran Alto 2:12½, Nutwood Wilkes 2:16½, McKinney 2:11½, Azmoor 2:20½ and Nazote 2:28½, is sufficient to attract the attention of prospective buyers. Among the mares offered is Elsie, the dam of four in the list, she is by General Benton, out of the great brood mare Elaine 2:20, by Messenger Duroc, bred and in foal to the great sire McKinney 2:11½; Bell Bird 2:22, by Electioneer, out of the great Beautiful Bells 2:29½, in foal to Iran Alto 2:12½; Nelly Benton another great brood mare in foal to Monbells 2:23½ and many others. Write to Wm. G. Layng, 721 Howard street, San Francisco, for catalogue. Here is a fine opportunity for some of our farmers and breeders to buy a choice bred mare in foal to the best stallion on the coast.

THE sudden changes of weather, with cold and chilling rains, works havoc with horse flesh. It takes but little sudden chilling when warm to produce cold in a horse, and this quickly develops into distemper. While this disease is not necessarily fatal, its nature is such as to deprive the owner of the use of his horse for a time, and often, indeed, leaves the animal worthless, if not properly treated in time. In this case "a stitch in time saves nine." The thing to do is to be prepared for emergencies by having on hand a supply of medicine that is known to be effective in such cases. Tuttle's Elixir is highly recommended and endorsed for this purpose by those who have used it longest, and therefore know it best. Dr. Tuttle says "it is sure to relieve and cure distemper if applied according to directions." Write to Dr. S. A. Tuttle, Beverly St., Boston, Mass., for his free booklet, "Veterinary Experience."

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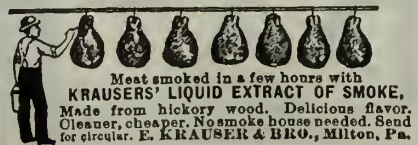
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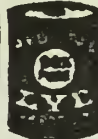
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Replace water with brine composed of 4 oz. salt to 1 gal. water, for two days. Put in brine of 6 oz. salt to 1 gallon water for 7 days. Put in brine of 10 oz. salt to 1 gallon water for 14 days. Finally put the olives into brine of 15 oz. salt to 1 gallon water.

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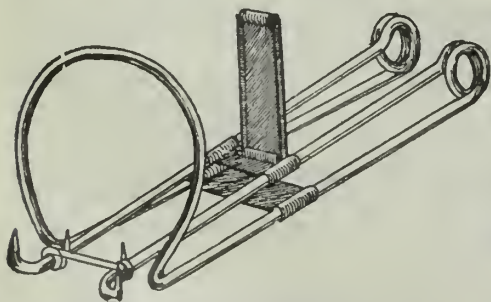
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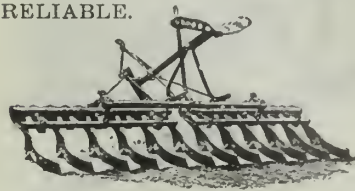
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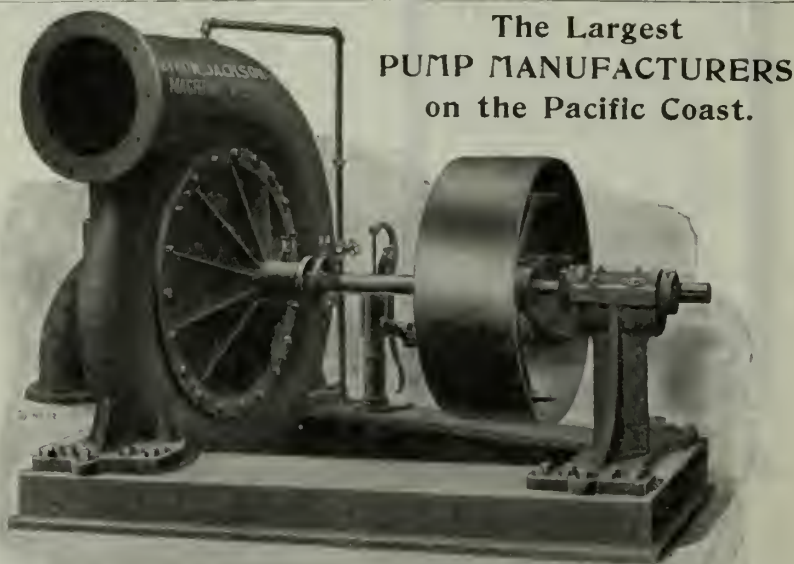
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# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 5.

SAN FRANCISCO, SATURDAY, FEBRUARY 1, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

### Hints on Fig Grafting.

Written for the PACIFIC RURAL PRESS by GEORGE C. ROEDING.

The successful production of the Calimyrna fig and its undoubted future as one of the great industries of this State has led many owners of fig orchards to make inquiries as to whether or not their old trees of the ordinary varieties could be grafted over into the new fig. The answer to such questions is that there is no necessity of digging up old trees, as they can be readily worked over into either the Calimyrna or Capri fig, without in either case affecting the quality of the fruit produced.

The writer has been experimenting with the grafting of the fig for a number of years, and has finally adopted a method, which may be said to be entirely new, and is to be recommended over the ordinary wedge or cleft graft, which, to say the least, is crude and unworkmanlike, and can not even with the greatest care be done with any degree of satisfaction, particularly on an old tree with large branches, where the great pressure on the scion often destroys the cambium layer and kills the scion. Another objection to the method of splitting is that the split made by the chisel has a tendency to split wider open when the warm weather sets in, and it also takes a long time for the wound to heal over.

In grafting over orchard trees the branches to be grafted should be cut off to within 18 to 24 inches from the point of divergence from the body of the tree, allowing at least two branches to remain, one of which should be on the southwest if possible, so that the grafts will be shaded from the afternoon sun.

The object in leaving the branches is for the purpose of having an outlet for the sap, for the removal of the entire top of the tree is dangerous. In the coast counties fig trees, and other trees as well, can have their entire tops removed, and still withstand the shock, the scions taking readily, if properly inserted, but in the interior valleys, where the atmosphere is dry and warm, to remove the entire top of a fig tree close to the main body would result in the loss of the tree, a fact which has been fully demonstrated by the writer by actual experience. The two branches which have been allowed to remain can be sawed off entirely the following season, or they can

be in turn grafted, if the scions of the year before have not taken well, or if you have not sufficient branches from your preceding season's grafting to form a good head on the tree.

After having sawed off the branches the stumps or subjects to be worked on should have the tops neatly smoothed over with a sharp knife so as to have a clean, smooth surface, particularly along the edge. From two to four scions should be placed in each stock, the number of course being regulated by the size of the stump. Cut out a V-shaped piece of bark; the distance from the top of the stock to the point of the V should be from 1 to 1½ inch.

Select a scion of the proper size, making a sloping cut along the lower end, as long or somewhat longer than the incision on the stock. The scions should be cut the same as for a whip graft, except that the cut is all on one side and should have a little more bevel and the second cut for the tongue of the whip graft should be omitted. The scions should never be



White Adriatic With Summer Growth of Grafts.



White Adriatic Grafted With Calimyrna Fig Scions.

smaller than an ordinary lead pencil; as a rule scions from two-year-old wood, as they have very little pith, with a diameter of  $\frac{1}{8}$  to  $\frac{1}{2}$  inch will be found to give the best results.

The scion should be of such a size that it fits snugly into the opening in the stock, so that the bark on both sides of the scion touches the bark of the stock. After the scions are placed, wrap tightly with five or six-ply cotton twine, so as to hold them in place, and cover the wounds as well as the stub with liquid grafting wax. Also be careful to wax the top of the scion to prevent drying out. Never use wax cloth for wrapping, or if you do, be careful to remove it early in the summer before the warm weather sets in or the bark, when the grafts are set, will be smothered and the grafts will die. After the scions have become well united, which takes from two to three months, the strings can be cut.

The writer prefers this method of grafting to all

others and has had no difficulty in making fully 90% of the scions grow, many of them making a growth of 5 to 7 feet in a single season. This method of grafting cannot be practiced until the sap begins to flow, and from the latter part of February to the 1st of April has been found to be the best time. The scions should never be more than 4 inches long.

The grafting wax should be melted in a pot and put on hot, using a small paint brush or a brush made out of short pieces of hay rope tied to a small stick answers the purpose just as well. The best results have been secured by using a wax made of one pound beeswax, three pounds resin and three ounces of raw linseed oil by weight. Place the beeswax and resin in a kettle and cook same until thoroughly dissolved, then add the oil and allow the ingredients to cook slowly for ten or fifteen minutes longer. Remove from the fire and as soon as the wax has cooled some pour a small quantity into a bucket of lukewarm water. Grease the hands and take the congealed mass and knead and pull it until it becomes very tough; wrap in oiled paper and it is ready for use. By preparing the wax beforehand the ingredients are mixed in proper proportions, which is not easy to do when you have a large amount of work to do in the field. This wax is also far superior to wax which

has not been pulled.

Walnuts, pears, olives, in fact, almost any variety of deciduous tree, can be grafted by the method described, with far less work and much better results than with the clumsy and crude cleft graft, and a branch 12 to 14 inches in diameter can be as readily worked over as one 4 inches in diameter.

The accompanying illustrations tend to make the descriptions more clear. First is the V-shaped cut in the bark of the stock carried down to the alburnum or sap wood and the scion with its proper oblique cut, even and smooth, so that it plants itself evenly on the bared sap wood and is held firmly against it by the wrapping of cotton twine. The central picture shows a white Adriatic grafted to Calimyrna March, 1901, with grafts in place and the exposed bark protected from sunburn by wrapping with burlaps. The third picture shows the same tree in December, 1901, with the summer growth 3 or 4 feet in length.



Fig Grafting—Preparation of Stock and Scion.



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E. J. WICKSON. Horticultural Editor

San Francisco, February 1, 1902.

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## The Week.

The cold snap is holding back deciduous fruit trees quite acceptably. Reports of snow on the mountains have a welcome industrial import, and rains in the valleys have stimulated both confidence and field work. The north winds could be well spared, but people who look at them as rain breeders are content. On the whole, things are looking well and people are busy.

Since our last report wheat sagged a little, but has again stiffened up on the north wind basis. One ship of wheat and one of barley have gone out, with a little over 2600 tons each. Freights are at about the same rate and weak, but better here than at the Sound ports, whence ships are now coming here for engagement. Barley is strong and slightly higher for feed; Chevalier for shipping is also in a little better request. Oats are strong and have an upward tendency. Corn and rye are firm and unchanged. Beans are a little easier for pinks and the like, but not much changed. Low prices at the East have such effect here. Bran and other millstuffs are the same as last week, but hay is higher and active. Beef and mutton are steady and hogs are easier, but all are unchanged in prices. Butter ranges as before, but there is a relatively greater request for common grades of fresh than for fancy, as common trade is passing from stored to fresh stock. Cheese is weak for all but strictly fancy mild new, which is firm. Eggs are in better tone through a shipping demand which is expected to help this market for a month or so; though the trade is thus in better shape prices are unchanged. Common poultry is not selling readily as it competes with Eastern, but choice young or large fat fowls go pretty well. Potatoes and onions are being marked up by holders to compensate for shrinkage through decay, but trade is not lively. Common oranges are weaker and there is much fruit out of condition, but there is demand for fine Navels. Lemons are quiet; choice are selling fairly, but prices are unchanged, though limes are higher. Dried fruits are firm; the trade is running strongly on pears and peaches. Prunes are quiet and steady, while raisins are scarce, outside of stock now in litigation. Almonds are steady and well cleaned out, while the few walnuts which come find a firm market. Hops are firm at old figures. Honey is unchanged. Wool is practically out of question for lack of stock.

According to reports furnished to the daily papers the prune combine is falling to pieces too rapidly to mention. It is said that of the 3700 members who enrolled themselves when the Association was formed,

not 10% are now with it. The falling off in acreage has been still greater. There is naturally some chagrin throughout the State that the San Jose region which proposed to lead in the co-operation is the center of disaffection. Gen. Forman of Los Angeles, a member of the Association, reflects the outside sentiment when he says in a published letter:

Personally I think nothing can be done toward combining until the growers of Santa Clara county have another dose of prunes at 1 cent per pound for two or three years. If the prune growers of Santa Clara county let the Association die, let all the hard work that has been done in its behalf, and let all the experience that has been gained by the Association during the past two years go for naught, I think it will be a very long time before they will be able again to secure the co-operation of the balance of the State.

The positions of both the prune and raisin combination seem much the same, and have been brought about by strife and discord among those who joined in the undertakings. It will be necessary for all the fermentation to go on, and possibly something sound and durable can be racked off. It is too sad to think of all the efforts, which seemed to embody much principle, failing utterly. It seems to us that such can not be the ultimate result; but how long it will take for all the hateful stuff now in fermentation to clear itself, no prophet has yet declared.

It is pleasant to turn from these cases of suspended co-operative animation to the activity which now prevails in the grain growing districts through the efforts to gather the growers into an organization which shall clear the course to foreign markets of the obstructions which now lie strongly intrenched in it. We have received a strong statement from Mr. G. W. Pierce of Davisville, president of the Association, for which we hope to find room next week. Not only are the growers, but bankers and capitalists who have investments in wheat property are joining in the undertaking, for to accomplish what is intended would certainly return something to all concerned—even to the mortgage, for even this unfortunate thing does not like to be robbed of its deserts. California wheat growing ought to be in good heart and reasonably profitable, and if united action among those in the interest can help toward this end, do not let it be longer delayed.

Last week there was mention of the organization of southern California bee keepers, with motive like that of the grain growers, viz.: to get out of the product returns to which they are fairly entitled. The details in this case are different, but the principle is the same. At the meeting this week in Los Angeles, the plan which was finally adopted, after much discussion, was that the several vice-presidents shall organize in their respective districts local bee keepers' associations, which shall elect directors of a central body to be termed the "California Honey Exchange." This organization is to have its headquarters in Los Angeles and will probably allow the Southern California Fruit Exchange to handle its produce through their agents in much the same manner as the deciduous fruit growers and celery growers now operate. The successes in this line at the south warrant the bee keepers in choosing the same direction.

The bee keepers propose also to improve the foul brood law to stop the danger that arises from the use of box hives; to provide that bee keepers secure a certificate from an inspector before they are allowed to move their colonies, and that those coming into the State with bees shall secure a certificate before releasing the insects.

We are pleased with the appointment by Governor Gage of Capt. M. J. Daniels of Riverside to a vacancy in the State Board of Horticulture. Capt. Daniels is a commanding figure in the southern citrus interest. He is president of the Riverside Fruit Exchange and is a grower of good size. He is also very skillful in public affairs and did a good deal to turn the wheels of the Kasson reciprocity factory at Washington the wrong way so that these strange creations which reciprocated against the interest of California were thrown into innocuous desuetude. Capt. Daniels will do much to bring the State Board of Horticulture into greater prominence in the interior of southern California, and if he can get the people of Riverside to take some interest in a convention under its auspices we shall be glad to be there.

## QUERIES AND REPLIES.

### Low Heading and Sunburn.

TO THE EDITOR:—We are located in an arid region, where the climate is very dry, and sometimes we have an insufficient water supply. The sun is very hot and shines practically all the time during the summer, as there is no fog and very few clouds. Our trees are easily sunburned if the trunk or branches are exposed to the sun's rays. In your book, "California Fruits," which I have and frequently consult, you recommend that "sunshine be not allowed to touch the bark during the heat of the day. This protection is secured, even for young trees, by low branching and the encouragement of small low laterals." You state that this should be done not only to keep the tree from burning, but also for the sake of carrying the fruit as low on the tree as possible.

We have always pruned our trees as recommended by you, leaving nearly all of the small growth and fruit spurs in the lower part of the tree, only removing a part of them when too dense. Of course, we aim to have only a few large limbs below, to form the main body of the tree. This winter there has been considerable pruning done among the almond orchards here by parties who have taken off all of the small low laterals and fruit spurs to a height of from 4 to 6 feet, leaving the trunk and main limbs absolutely bare to the rays of a burning sun. When the trees are pruned this way, it not only renders them liable to sunburn, as well as making the tree yield all of its fruit in its highest branches, but it also prevents nearly all of the shading of the ground at the base of the tree, which you recommend.

We have understood that all limbs which are liable to interfere with each other, or which are crossed and rubbing together, or will rub together in a short time as the tree gets larger, should be removed; but among the trees above referred to there are some cases in which such limbs have been allowed to remain. I would like also to have your opinion on this matter.

We have some trees which are badly sunburned, and are stunted presumably from this cause. I would like to know what is the best thing to do with a tree which is injured by sunburn, or whether you know of any remedy to apply in such cases.—GROWER, Los Angeles county.

We have never seen any reason to change from the plain teaching of California experience that low headed trees are most desirable except, perhaps, in the mountains where heavy snowfall will sometimes break down branches which start near the ground. The fruit spurs low down will naturally die as the tree attains greater size, but they should be retained as long as they serve a purpose in shading the trunk. Pruning up almond trees as high as you mention is a great mistake for the reason which you give. The shading of the ground is a matter of the greatest importance in the dryer and hotter parts of the State. It is so desirable in Arizona and other places where irrigation is available that alfalfa and other leguminous plants are being grown for the purpose of covering the ground from the extreme heat, which not only raises the soil temperature to a degree not favorable to the health of the roots, but also, by reflection, injures the foliage and branches. Of course such cover can only be grown where the moisture is ample for it and for the trees. High pruning trees in your locality would come to disaster for the reasons you mention. There has been a claim for high headed trees in regions where frosts prevail because it was observed that the lower branches were free of fruit, while the upper branches were well loaded, but if this policy is followed there certainly must be careful protection of the bark by whitewash or other covering to prevent the direct access of the sun. It would seem to be a better proposition to plant such lands to fruits or other crops not so susceptible to frosts.

A certain amount of sunburn will be grown over if whitewashed to prevent more of it, but trees which are badly sunburned and stunted from this cause are difficult to restore. It is usually better to plant a new tree and protect it well.

There must, of course, sometimes be an exception to the rule about removing crossing limbs in the head of the tree. When such a limb is necessary to fill out the top it should, of course, be retained until it may be spared later.

### Pine Tar Dangerous.

TO THE EDITOR:—Do you think it would hurt vines or fruit trees to use Norway tar or any other kind of tar on them? If not, which is the best to use?—READER, Saratoga.

Norway tar or North Carolina tar, or any tar that



comes from condensation of sap containing turpentine, is dangerous to use on fruit trees or vines. On the other hand, coal tar from the gas factories seems to be quite safe and answers a very good purpose when applied to wounds of knots on trees or vines.

#### Bean Growing on Uplands.

TO THE EDITOR:—Can I grow dry beans profitably on a loamy soil which retains moisture well? It is in the warm belt of the foothills. What kind would be best to try? Can I store the crop in the barn and thresh out at leisure, or can I get a machine for threshing? What will be the yield per acre?—READER, San Jose.

The situation and soil which you describe would seem to be well suited to the growth of beans, if you are sure that moisture enough will be present during the latter part of the summer to keep the plants growing and give you good plump beans. The bean known in the market as the pink bean is one of the most hardy and would be a good one to begin with. The harvesting can be done as you speak of, threshing out the bean with a flail during the winter or arranging a threshing floor and allowing horses or young stock to tramp them out. You must handle the crop before it gets so dry as to shell out freely. There are bean threshing machines, but they are of large capacity requiring an engine or horse power, and you would not wish to invest in such apparatus until you had demonstrated on a smaller scale whether the crop is profitable. There are not many beans grown in your county. The crop per acre depends so much upon the variety and upon local conditions that no general estimate could be given. You will have to determine that for your land and locality by experiment. Most of the bean crop is grown near the coast or on the moist bottom lands of the interior. The bean plant does not enjoy dry heat. In a thermal region you can safely plant earlier than on a bottom and you may be able to ripen the crop before the moisture gives out. You will learn much from your first experiment, which should not be on too large a scale. One would think that in such a situation as you describe there would be more money in string beans or green peas.

#### Beef Prices and Market Reports.

TO THE EDITOR:—How does the beef market vary north or south from San Francisco from your report? Butchers here tell me that the price of beef here in Stanislaus county are San Francisco prices less the freight. If this county consumes more meat than it produces, which I think it does and does not ship meat to San Francisco, why should the price be less? How does the consumption of beef in California correspond with the production? Isn't your market taken on the day you go to press?—SUBSCRIBER, Stanislaus county.

The prices vary in all sorts of ways in different localities according to local conditions. Usually prices of any produce in country towns are San Francisco quotations less the freight to this point, because the local buyers know that the seller cannot realize these prices by sales here without paying the freight. They are not likely to pay more unless local producers are disposed to hold back and force the local retailers to ship in cattle, and then they may do a little better rather than pay freight and commissions themselves. The local buyer does not often pay what the producer's point of view would indicate he should, but what he is obliged to pay to get the stuff. If Stanislaus county butchers have to ship in beef anyway they might pay San Francisco prices without deducting freight, unless they are now buying in a cheaper market than San Francisco and are using a grade of beef which is lower than full figures here. The production of beef in California is very much less than the consumption. Our market prices are taken on the date given at the beginning of the market page, not the date of the issue of the paper.

#### Wrinkly and Smooth Peas.

TO THE EDITOR:—What is a good yield of green sweet peas to the acre? What does a sack of same weigh? Do the sweet, wrinkled varieties command a better figure than the smooth field pea? Which gives the larger yield? Are the dried green peas quoted in market reports sweet or field? Is there a market for sweet peas as seed?—A SUBSCRIBER, Rio Vista.

Twenty to thirty sacks of dry peas per acre is a good crop on good land. The weight of a sack of green peas in the pod is about 50 pounds; a sack

of dry peas weighs about 140 pounds. The wrinkled dry peas usually bring a higher price than the smooth; the crop of them is much lighter than of the smooth. The dried green pea quoted is not a wrinkly pea; it is a shot pea of a greenish or bluish color when dry. There is a limited market for sweet peas dry for seed purposes, but they must be fine and should be true to name of variety for seedsmen to use them. Such peas should be grown with particular care. Of course, the sweet pea as a flower is a different affair and not contemplated in these comments.

#### The Bearing of Robe de Sergeant.

TO THE EDITOR:—I have four or five acres of Robe de Sergeant prunes on very heavy soil which seem to be very shy bearers. They make a very heavy growth of wood, but very little fruit. They have been pruned heavily some years and some years not at all, but it does not seem to make a great deal of difference about the bearing. They are big, thrifty trees eight years old. Is there anything I can do to make them bear? Would you advise me to prune them out much or not? I have heard that driving a rusty nail into the trunk would help apples to bear, but I do not know whether it would have the same effect on prunes or not.—READER, Sonoma county.

We doubt if there is anything that you can do to make the Robe de Sergeant prune a good bearer. Many fruit growers have been trying that for a good many years, and many of them have resorted to grafting over to some other variety which was more regular in its bearing. The same course is all we can recommend to you. The Sugar prune commends itself for this grafting, as it is large, sweet, early and has thus far proved a very satisfactory bearing variety.

The popular notion that driving rusty nails into the tree trunks or branches affects their bearing is probably a delusion. There might be enough nails driven in perhaps to cause a decrease in the vegetative vigor of the tree and a consequent increase of blooming and bearing; but aside from that, there is no reasonable theory upon which the proceeding can rest. Undoubtedly bearing does follow the driving in of nails, as many have observed, but probably bearing would have ensued without them, because the trees had come naturally into condition for it. But the Robe de Sergeant, according to the experience of many growers, does not come into such condition, though some find it profitable.

#### English Walnut Planting.

TO THE EDITOR:—We desire to plant a row of walnut trees at a right angle to one set out four years ago, and desire the largest trees which may be absolutely relied on for transplanting from nursery. What age would you suggest, and would it also be advisable to procure the Santa Barbara soft shell on a wild root, considering the rather tough character of soil we would have to plant in?—GROWER, Mountain View.

English walnut trees can be safely transplanted at three or four years of age, although it is sometimes safe to take even larger trees, where conditions are right. The younger tree is so much more readily transplanted, and establishes itself so readily under average conditions, that in growth it is likely to catch up with one transplanted at greater age. The Santa Barbara soft shell, even on the wild root, in the central part of the State is less regular in bearing and generally more tender than the French varieties, like the Proëparturiens, Chabert, Mayette or Parisienne, which would be more likely to make satisfactory growth and to bear well.

#### The Unshiu or Satsuma Orange.

TO THE EDITOR:—Will you give me information about the hardy oranges from Japan? Where can I procure the trees?—GROWER, Placer county.

The Japanese orange known as the Unshiu, and renamed in this country the Satsuma, is unquestionably a hardy variety, ripening early. It is grafted by the Japanese on the Trifoliata, a wild citrus species of Asia. This also is hardy and the combination makes a hardy tree. The Trifoliata root is not, however, so free growing as the sweet seedling or pomelo seedling, and because of its dwarfing tendency has not been very largely used in California. Under favorable conditions, however, it will make a good-sized tree. You can get the Unshiu orange from any of our leading nurserymen. Whether they can furnish it on a hardy Japanese stock or not you will have to ascertain by correspondence.

#### Forage Plants and Standing Water.

TO THE EDITOR:—I have a piece of land on which I get waste water in plenty if I could get it all at once, but owing to the intermittent run of the water it is sometimes a necessity in hot weather to keep the water on it so long in order to get it through that alfalfa is scalded and killed. I use the land for pasture and it has come mostly to clover, alfalfa in winter and spring and salt grass or Bermuda in summer. Do you know of any forage plant that would succeed under the circumstances? Would orchard grass stand the treatment by water and make a good pasture? Would rye grass? Would white clover?—B., Riverside.

Our observation would indicate that rye grass and Eastern red clover would be most enduring under the conditions described. They can be sown together.

### WEATHER AND CROPS.

#### Report of the U. S. Weather Service for Week Ending January 27, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

##### SACRAMENTO VALLEY.

Cold weather has prevailed during the week, with frequent rains and killing frosts. There has been a heavy fall of snow in the mountains. The cold north wind on Saturday was followed by freezing temperatures Sunday and Monday mornings, causing some damage to garden truck, green feed and tender wheat shoots. Plowing was retarded by the frequent showers, but grain, pasture and orchards were benefited. Grain continues in good condition and a heavy crop is predicted. Orchards and vineyards are doing well and fruit prospects continue excellent.

##### COAST AND BAY SECTIONS.

Rain during the week has greatly benefited grain and pasture, especially in the southern coast counties, and has enabled farmers to resume plowing and seeding. There is considerable snow in the mountains. Cold north winds prevailed Saturday in some sections, and killing frosts occurred Sunday and Monday mornings in many places, but no reports of serious injury have been received. Grain is in very good condition, though making slow growth, and would be benefited by warm weather. Pasture is plentiful and stock are in good condition. Fruit prospects are excellent in all sections. In the vicinity of Santa Rosa a large acreage of new vineyards and orchards is being planted.

##### SAN JOAQUIN VALLEY.

Conditions have been more favorable for crops than for several weeks. Rain has fallen in all parts of the valley, reviving grain and pasture and softening the soil for cultivation. Snow has fallen in the mountain districts. Severe frosts have occurred in some sections, but no damage has been done except in retarding the growth of grain and green feed. Crop prospects are greatly improved, and with favorable conditions through the spring the yield of wheat and barley should be nearly average. Warmer weather and light showers would be very beneficial. Plowing and seeding are progressing, and considerable work is being done in orchards and vineyards. Fruit prospects are excellent.

##### SOUTHERN CALIFORNIA.

Cooler weather has prevailed during the week, and severe frosts have occurred in nearly all sections. The generous rainfall has been of immense benefit to all crops and has softened the soil sufficiently for cultivating in fields and orchards. In some localities early sown grain will probably make a fair crop and the grain acreage will be increased. Pasture has become plentiful in most sections and stock are doing well. Orchards and vineyards are in good condition. The severe frosts at the close of the week injured unprotected citrus fruits; but, as ample warnings had been given, it is probable the damage will be light.

EUREKA SUMMARY.—Rain and cold weather greatly interfered with farm work and growing crops, which are making very slow growth. Low temperatures are preventing premature budding. No damage by frost reported.

LGS ANGELES SUMMARY.—The long drought was broken by fine rains, which put soil in good working condition. Dry-sown grain will now come up. Plowing resumed.

#### Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, January 29, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	.86	17.03	30.61	24.29	52	28
Red Bluff.....	.82	11.64	15.41	14.71	50	28
Sacramento.....	.42	6.99	11.32	10.89	56	30
San Francisco.....	.41	7.01	13.01	14.26	56	38
Fresno.....	.32	2.52	7.45	8.03	56	16
Independence.....	.00	1.39	5.12	4.42	50	10
San Luis Obispo.....	.64	6.02	21.09	10.74	60	26
Los Angeles.....	1.32	4.03	8.23	10.83	60	32
San Diego.....	.72	2.10	3.81	4.83	60	40
Yuma.....	T	.22	.08	2.07	66	39



## HORTICULTURE.

### The Fruit Outlook in the San Joaquin Valley.

By I. H. THOMAS of Visalia, at the Fruit Growers' Convention.

In 1893, while a member of your board as Commissioner for the San Joaquin valley, I made a report of the then conditions of the deciduous and citrus fruits in this valley, taking up each county from San Joaquin to Kern. This report was published in the fourth biennial report of the State Board of Horticulture for 1893-4.

Since that time there have been a great many changes made in the planting of deciduous fruits in this valley. Orchards, where mistakes were made in the planting of wrong varieties, have been rooted up and leading varieties planted; and in many instances where irrigation brought the alkali to the surface too strong for stone fruits, trees have been taken out and pear trees substituted, and they are now producing profitable crops. The present outlook in the valley for deciduous fruits was never better, as irrigation systems have been extended, bringing large quantities of good lands within reach of water by extension of canals. The mode of irrigating with pumping plants is now coming to the front, so that anybody with a twenty or forty-acre tract of land can put in his plant and go to sleep at night without being haunted in his dreams with suits of riparian owners and assessments for water.

**OIL AND IRRIGATION.**—The discovery of oil in this valley solves the question of irrigation for the orchardist, as it has made it possible for him to have the water the year around. All he has to do is to turn on a small stream of crude petroleum and start his pump at the cost of 6 cents per horse power per ten hours.

At our district fair, held at Hanford in October, R. G. White of that city had the Daniel Best crude-oil engine on exhibition. This was an 8 H. P. engine with three pumps attached, running at an expense of only 48 cents for ten hours, using only twelve gallons of Coalinga crude petroleum each ten hours. For each additional horse power it takes one and a half gallons of oil for ten hours' run. This oil costs, laid down in Hanford, 4 cents per gallon, or about one-tenth of what it would cost to run with steam.

**THE LOWER COUNTIES.**—The completion of the canals around Modesto and Turlock has made it possible for thousands of families to secure good homes on lands that are easily worked, and with water are very productive, growing anything in the fruit line that may be planted thereon. It is the writer's opinion that some of the best olive lands in the State are in this section. Merced and Madera, as well as Fresno, are also well to the front in the growing of deciduous fruits.

I have not the statistics of the shipments of fruits from Fresno this season, but it is very large, and has been quite profitable to the grower, as well as giving employment to thousands of men, women and children in the canneries and packing houses.

**TULARE COUNTY.**—Tulare county, the home of the peach, nectarine and prune, has had a prosperous season, and the growers have done well in shipping green fruits East, as well as supplying canneries outside of her own in other parts of the State.

The Visalia cannery this season used 3176 tons of peaches, and our dried prune for this season is 7,280,000 pounds. To substantiate the claim that our county can grow more prunes to the acre than any other portion of the State, I will mention one orchard (the Toqui orchard near Visalia) of thirty-nine acres, that averaged this season 342½ pounds of green fruit per tree. This orchard is six years old, and the cured product was four tons per acre.

The shipment of green fruit East from this county this season has been 275 cars, realizing to the grower from \$75 to \$150, and on Tragedy prunes, \$200 per acre. Of dried fruits (aside from prunes) the amount shipped is about fifty cars at prices satisfactory to the grower.

A large quantity of our grapes have gone to the wineries, and this made it possible for raisin growers to all come under the same umbrella (which they have not done) and get good prices for their crops.

The producing capacity of their soils don't seem to be depreciating, as I have reliable statements of sixteen tons of Thompson's seedless and Sultana grapes being harvested per acre in the Dinuba and Orosi districts.

Kern county has been carried away with an oil excitement, and orchards and vineyards have been neglected, though there are thousands of acres of as good fruit land in that county as there is in the State.

**KINGS COUNTY.**—This county is well to the front in deciduous fruit lands yet unplanted. The growers had five crops this season and received fair prices. The great problem that now stares them in the face, as well as other counties in this valley, is the pear blight, which looks as if it will destroy the pear industry in this valley. The eradication of this pest or disease, or explaining what it is and providing a remedy for the same, is far beyond the brain

capacity of the ordinary county horticultural commissioner, and if immediate help does not come from our State Board or University professors, there will be a great loss in this valley by blight.

In conclusion of my remarks on the deciduous outlook, I would say that the chances of making money in this valley out of deciduous fruits is as good now as it ever was. The planter can now profit by the experience of others, knowing just what to plant to supply canneries and Eastern shipping, as well as to grow the best drying product. With our facilities for irrigation, the planter should not now make a failure.

**CITRUS FRUITS.**—Now as to our citrus industry, I will not weary you, but give you a brief mention of the principal localities where orchards are now in bearing.

The citrus belt in the San Joaquin valley commences in Kern county and occupies the thermal belt of the west slope of the Sierra Nevada mountains to the northern part of the State. The planting of citrus trees for profit first commenced on a small scale at Porterville about the year 1888, and the first carload was shipped from that place in 1891. At this writing there are 800 acres planted to oranges and lemons, with a shipment of 325 cars from the Porterville station for the present season's crop. The water for irrigating this section comes mostly from Tule river, though many of the orchards are irrigated from pumping plants, there being no difficulty in getting water at a minimum cost.

In 1888 the Lindsay Land Company purchased 2000 acres of land where the town of Lindsay now stands, and incorporated, with Capt. Arthur J. Hutchinson as manager. They at once commenced the improvement of their holdings, and now have planted in that district 1800 acres. The first shipment from this place was in 1896, when ten carloads were shipped out. This season the crop will amount to 300 cars. The orchards in this vicinity are in small holdings, which are irrigated by water from pumping plants supplied by the Lindsay Water Development Company. This section of Tulare county is underlaid with plenty of water, at a depth of from 40 to 100 feet, and with power furnished by the Kaweah Electric Power Company, there is an abundance of water for all, and during all times of the year. Besides the Lindsay Land Company, other companies have and are now opening up large tracts of land around Lindsay, and are meeting with success in finding water. Messrs. Hammond & Wishon have two large tracts, consisting of 500 acres, which are cut up in small holdings, with water developed to cover all the land.

One of the chief points in the oranges grown in this section is, when they do not show much outward color, the meat inside is well colored, sweet and full of juice, causing them to color readily when packed, without shrinking, as many oranges do when gathered green. Lemons from this section, even on November 21, at public auction in New York, brought \$1 per box more than imported lemons.

The acreage now planted at Exeter is about 1800, in large holdings, and the shipment from there this season will be 175 cars. This section is mostly irrigated from a ditch taken out of the Kaweah river, some 12 miles northeast of Exeter, though they don't rely altogether on the ditch, and have wells and electric power to resort to during the fall, while the water is low. At one point here the water is forced up on a mountain to the height of 500 feet, where several hundred acres are being planted in a belt that is absolutely frostless, the temperature being 15° higher than at the base. Citrus trees along the base of the mountain come into bearing very young. As an instance, Mr. Griffin has a two-year-old orchard here that will yield a carload this season, some trees with a half box of merchantable fruit on them.

The Bonnie Brae orchard, managed by Mr. George Frost, being the oldest orchard here, is doing the most of the shipments this season, though Mr. Moore and Mrs. Newhall have orchards that are almost paying for themselves in this season's crop.

Lemon Cove, some 10 miles northeast of Exeter, has 480 acres planted to citrus fruits, mostly lemons, to which fruit the soil is best adapted, and I have no hesitancy in saying there is no place in California that can produce a better lemon than this section, which fact has been demonstrated by analysis. The shipments from this point this season of lemons alone will be eighty cars.

Antelope Heights, situated on the north side of the Kaweah river, is a new development, and there are about 300 acres planted, the trees now being one and a half years old. The orchards are in small holdings, are irrigated by pumping plants, with an inexhaustible supply of water. This section will never be bothered with frost, and is destined to be one among the best localities in the valley for citrus fruits.

East of Sanger and Reedley, in Fresno county, there are about 1600 acres planted to citrus fruits, the trees mostly one and two years old. The shipments from this section will be about forty cars.

Along the foothills, in Madera, Merced, Stanislaus and San Joaquin counties there are thousands of acres of citrus lands, which need only water to make them profitable.

In conclusion will say that the localities I have

spoken of in this paper are to my mind not to be excelled in this State for citrus growing, as they are free of scale—the climate is in that condition that many of the scales that infest other parts of the State cannot live here. Our oranges catch the early Eastern market, when the top prices rule.

A parting word to the fruit growers present: California grows the best fruits in the world, and the world is beginning to want them. Now, cannot you as growers and as intelligent men get together in some kind of an organization and market your fruits, both green and dried, so as to make the business more profitable than it has been? Cannot you make the umbrella large enough to take all the growers under its protection, and not leave 30% to 40% outside to cut your throats?

### Strawberry Culture in Arizona.

By J. W. FORNEY, Glendale, at the annual meeting of the Arizona Agricultural Association.

Two essential things in strawberry culture are proper soil and sufficient water. The soil ought to be free from alkali and ashes; barnyard manure is objectionable, too. Hot weather will thoroughly test your berry plants, and these three things mentioned, if they abound in your soil, will prove fatal and be the first cause of failure.

**LAND.**—In selecting land for berries, avoid that which has been covered with brush and the brush burned instead of taken off. Good, deep soil, not too much sand, and yet sand enough to make the soil work nice, will give good results without fertilizing. A large per cent of the soil in this valley is in good condition for berries after growing a crop or two of grain, but is much better if first used for alfalfa two years. The land should have 2 to 4 inches fall to the 100 feet, and the plat ought to be so arranged that the rows will be 150 to 200 feet long. The land must be flooded twice to get it soaked deep and thorough. Two or three days after the last irrigation it will be ready for the plow; plow twice, first time 3 inches deep, then harrow or float until the soil is in good condition, after which plow again 5 to 6 inches deep, harrow, float and level until in the best of condition.

**LAYING OFF.**—Now we are ready to ridge the land; a 10-inch plow will do the work just right. Start on right hand side of the land and throw the first furrow out, running the plow from 3 to 4 inches deep; turn and go back in the same furrow, throwing a light furrow the other way, which can be done by keeping the near horse in the furrow. If the team has been driven straight and the plow run the proper depth, the first row can be left for the present and the next row should be 3½ feet from the first, by going through the same process as for the first, keeping the team on the level land and not tramping or turning on the ridges. If the work is well done thus far, the first rows are ready to rake.

**PLANTING.**—Take a garden rake and go down one side of the row, raking the loose soil to the top of the ridge, and up the other side; this is to take off the sharp edge and give proper soil and space to set the plants. Now we have a furrow to plant in 10 inches wide and 6 to 8 inches below the extreme top of the ridge. Set the plants on the side of this furrow, within an inch or two of the bottom—one plant on one side, then 15 inches ahead a plant on the other side. Don't forget to stay close to the bottom of the furrow, so that the row when planted will be a line of plants on each side of the furrow with 10-inch space between and only an inch or two at most to the bottom.

Soon as convenient after the plants are set, they should be irrigated by a very light streamlet of water down the row; do not spoil the job now by turning in a stream of water that will run through in a few moments, but gauge the water and let only what will pass through an inch hole, with very little pressure, down a row. It may take an hour or two to get through to the other end, but a good stand and a fine berry patch largely depends on how you set your plants, and how small a streamlet you make use of in irrigating. They ought to be watered twice a week. Keep all weeds out, and, if the ground is dry enough, hoe a few times the first year, very shallow and mostly in the furrow, and that only until the runners start.

As a rule, it is the best policy to pull or cut the runners; but let them go and mat the whole. I find cutting runners, hoeing and cultivating detrimental rather than profitable in this country. When the fiber roots of the plants are broken or cut the alkali has more effect than on a plant not molested. Many plants die from this very cause; they will not endure the ordeal of resetting in alkali soil; but, if left where they have grown from the runner, they will live and thrive for two or three years.

The berries from a new patch will pay all expenses for the first year if conditions are fairly favorable. The second year will bring the best returns and will continue profitable for from four to six years.

**CARE.**—November is a very good time to set plants; but, all in all, February is the best time. The Arizona Everbearing is perhaps the best berry for this



soil and climate, being a free bloomer and a prolific bearer of a fine berry of medium size, good color, and, under proper conditions, sweet and of fine flavor; also a very good shipper. I have shipped as far as Denver in good condition.

In February of the second year the bottom of row must be cut and taken up the width of an ordinary shovel, and must be taken out of the furrow and turned upside down on ridge; also, cut the plants out on top of the ridge down to within 3 inches of the lower space. Cut out with the shovel, thus leaving a mat of plants on each side of the space below 3 inches wide, so that by the first of May this space will be shaded by the plants, and the berry patch will be in good shape to retain the moisture during the picking season. The ridge being high, dry on the top and wide, will help to retain the moisture. It will be seen that we thus have very little or no surface that is covered with water and exposed to the sun.

May 1st the water must be cut down to what will pass through a  $\frac{1}{2}$ -inch hole to each row.

**VARIETIES.**—The Everbearing will begin to ripen the first of April and will continue until August. The first and main crop will be at its best by the end of the second week and continue for two or three weeks, then will slack for a few weeks, after which there will be a second blooming, producing a lot of very fine berries, that will not altogether cease until August.

In picking, one-half the patch should be picked one day and the balance the next day, so that the same ground will be gone over every other day. The stem should be pinched off within half an inch of the berry, and the berry dropped into the basket without being touched. All berries that have been covered with water or pecked by birds should be dropped into a separate basket and none but first-class berries put on the market.

I know of a berry patch at Glendale that produces at the rate of  $3\frac{1}{2}$  tons of select berries per acre in a single season, yielding a net profit of \$550 per acre, besides supplying a family of six with berries daily, which were not taken account of.

## AGRICULTURAL SCIENCE.

### Reserve Forces in Plants.

An address by DR. BYRON D. HALSTEAD, State Horticulturist of New Jersey, at Trenton, January 15, 1902. Reported for the PACIFIC RURAL PRESS by JOHN BODINE THOMPSON.

We have seen a seedling grown in darkness and it is pale, sickly, and dies unless soon brought into the light. Another seedling is germinated in full exposure to light and it thrives for a time; but not being fed with soil water duly charged with soluble salts, it withers and dies. Another seedling has light and soil moisture, but the plant being under a bell jar, from which the air has been pumped, it is asphyxiated and perishes. Of course other untoward conditions, as super-heat or a freezing temperature, may bring death; but when all these secondary surroundings are right there must be an abundance of soil water, of wholesome air and of sunlight, for ordinary plants to perform their functions regularly and well.

These are the great fundamentals of plant growth, and as such cannot be too frequently placed in review by crop growers. None of them are altogether under man's control, and this is the very reason why their importance should be strenuously insisted upon. It does not follow that when a plant is ailing that it is being deprived of one or more of these prime essentials, but in such case it is usual that one or the other is below the normal.

**INSTANCES OF RESERVED FORCES.**—It is our purpose to follow the substances as they go from the leaf factories, all the season through, and locate them in the leafless trees and shrubs and herbs where they are found during the winter, the season of rest.

For the trees we might take the maple as a type. In early winter, if one pleased to make sections across the main stems and apply a solution of iodine, he would find that in the plates radiating from the center, which we call the "silver grain," there would be an abundance of starch, colorless until made blue by the iodine, this starch is there packed away in surprising quantities. In the younger twigs the reserve may be in the pith as well, and in fact in all places generally, except the outer bark, and the soft layer capable of growth that lies just outside the wood.

The maple is not altogether inactive as it stands uncovered through the winter months. Before the days have lengthened much and but a suggestion of spring breathes over the willows and alders, the maple is awakening to renewed activity. The sugar maker notes this and gets himself ready. He thrusts his spiles into the trees and draws therefrom the sweep sap. He is draining the reserve forces, "sapping the life blood," so to say, from the tree before it could use it for its new growth. There is much for the tree to do before the leaves, young and tender, can be hung out in the sunshine and air for the new season's work. In fact, the leaves need to be made before they can be displayed; and all this painstaking work is done at the expense of the re-

serve materials which were held largely in the region of the buds, but generally throughout the tree.

Other illustrations might be brought from the south, where the sugar cane is robbed boldly of its sugar, by being cut and run between great rollers from which the sap flows to the evaporators, and so on to the refinery and the barrel for shipment.

Still further, we might visit the great beet fields, where under the influence of sun and soil and air the humble plants are storing sweetness in their roots for the next year's growth of stalk and seed. Man turns the current of their life, cuts off the plant in its prime, and the reserve is made suitable for table use. The maple, the cane, and the real "sugar factories," and the great buildings we call such, are at best only and refiners of a product they cannot make.

In the same way the great corporations and companies which display the names of "starch manufacturers" in glittering signs above their monstrous establishments are dealing with a product that was made by plants in their own quiet way.

**A LESSON FROM THE POTATO.**—In every green leaf the potato plant gathers in the elements and sets them in proper order, and then the compound is stored up in the swollen stems below the surface of the soil, from which new plants are to grow the coming year. In like manner the corn makes starch and stores it in the grain, as does the rye and the rice.

In this way these plants labor for their posterity, and in so doing fulfil their mission. Man sets them in rows or sows their seed in suitable situation, cares for them, and profits by the increase. He throws around them his watch-care, and succeeds in his design so far as he knows their wants and deals wisely with their reserve forces.

This dealing wisely with reserve forces lies at the foundation of profitable crop growing. In the case of the potato there is still much to be learned concerning the treatment of the tubers from which the future crop is to be grown. When ought such potatoes to be harvested, and what are the most favorable conditions under which they should be kept until the time for planting? Being a native of a warmer climate than our own, frost is destructive to the tubers, and excess of warmth and moisture starts them into growth too soon. The northern grown seed-potatoes are better than our own, largely because of superior conditions for their storage in the colder climate. Any potato grower who is thoroughly awake to the importance of a fine quality of seed is far on his way toward success in his business. He deals generously with the reserve forces that lie back of his future crop.

All this applies with equal force to bulbs and to every form of propagation where a portion of a plant is made the beginning of a center of life and growth. "Like produces like," and this law of nature demands the most careful attention to details in the selection of scions and cuttings, as well as of roots and bulbs. The person who is thoughtless here has sold his birthright to progressive agriculture and horticulture for less than the savory lentils that pleased the palate of the short sighted Esau.

**HOW THE FUNGI PROVIDE FOR REPRODUCTION.**—The lower forms of plant life, also, are not without abundant illustrations of vital energy conserved. In fact, they are surpassed in this respect only by the rapidity with which they multiply after a period of quiescence and the finding of conditions favorable for growth. "Mould" flourishes upon the bread and "mildew" upon the leaf; and as the food diminishes or surroundings become unfavorable these microscopic organisms quickly condense the protoplasmic substance into bodies of comparatively large size over which thick walls are placed, and indurated spores result capable of resisting heat or cold or drought. The hard time once past the life renews itself, the confined energy bursts its bounds and a new generation of activity ensues.

Examples of this are endless upon every hand. In crop growing there is a constant struggle against these unseen foes which wage an ever renewed warfare for the possession of the crops, in the form of grain rust and smuts, blights of the orchard, mildews of the vineyard, and fungi peculiar to every plant of the field or garden. In the winter they are in hiding in the form of spores and, seemingly inert as dust, are carried by every wind that blows. These reserve forces are as mighty as they are small, and baffle because of their insidiousness. They remove crop growing from the realm of certainties, unless it be that of loss from their inroads. Vanquish one army of them and a reserve crop marches in and takes up the work of destruction. Their name is legion. The crop grower's hope is not so much in their extermination as in their inaction and ineffectiveness. It is almost hopeless to directly stay the reserve myriads of any type of germ; but all rational efforts should be put forth to hold them in check or make their attacks of no avail. The microscope is a worthy weapon by means of which the dormant germs may be found in soil and air and every other material thing; but the grower's hope is in the application that prevents their entering the susceptible tissue, or in the breeder's art by which the plant may be made immune.

**ARID LAND PLANTS.**—Some striking examples of conservation of energy are met with in the arid regions of our country. The supreme value of water is appreciated by the desert plants and, by reducing

their surfaces to a minimum and covering all with a skin-like leather, the water is held within even amid the withering heat and the exhausting winds. The globular or club-shaped cacti guard themselves against roving animals by a covering of spines. They may not increase in size for years, but at the proper time will thrust out a large flower and mature seed at the expense of long time accumulations. Constantly on guard against their foes, these plants stand as conspicuous examples of forces in reserve.

It is equally to our purpose to mention another tribe of plants, also of the arid regions. Hugging the ground with long, thick, lance-shaped leaves for defense and storage of food, they may thus vegetate for a score of years and, then, at the expense of a hoard of starch and sugar, quickly send up a flower stalk to 20 feet, bearing blossoms and seed capsules in great numbers. Of such is the century plant and its allies, some of which, as yuccas, are to be found in our ornamental grounds.

**THE SEED.**—The finest clean-cut instance of reserve forces that we have in plants is to be found in the seed. It is constructed to lie in waiting for its opportunity, as a tiger crouched ready to spring upon its prey, or as the dynamite remains an inert and harmless powder until properly confined and the blow struck.

The seed is the migratory condition of plants, and as a rule this is the only means they have of moving from place to place. For this transfer they are provided with various devices for clinging to passing animals, or have wings and airy balloons by means of which they are carried by the winds on voyages of long or short distances.

Aside from these exterior modifications which find their use in distribution, the seed has its coats which serve to protect the vital and delicate germ within. The enclosed space is filled, in whole or in part, with substance upon which the embryo is to feed while undergoing the initial stages of growth. This substance is usually a mixture of several materials; but in some seeds it is largely starch, as in corn, wheat, and other grains. In others it is mainly oil, as in cotton, flax, and the castor bean, from all of which by pressure a commercial product is obtained that is used for food, in the making of paints, or as a remedy for some of the ills that flesh is heir to.

Three-fourths of the starch in a grain of corn may be removed and the embryo will germinate and grow, but without the vigor that would otherwise obtain. A bean may be cut through the middle by the shorter diameter, and one part will contain the parts that are for growth while the other was designed simply to assist that growth. A whole bean or a whole grain of corn is better for seeding purposes than any fraction thereof. Mutilated beans or corn will germinate quicker than whole grains. But this gain in time is due only to better facilities for the absorption of water, and soon the lack of proper nourishment at the latter stage is shown by enfeebled growth.

I have sometimes sifted a lot of seed into three sizes and sowed equally from each upon similar areas, and always with the same result. The large seed gave strong, fast growing plants, with a deep shade of green in the early leaves, indicating vigor and health. The small seeds, if they grow at all, bring forth small, sickly plants. Such seeds deserve no place in any seed bed. Large radish seeds will grow into marketable roots in much less time than small seeds.

But size does not determine all of the reserve forces. A seed holds in reserve also the accumulations of its race, which are imponderable. It is a great deal to be well born; but the highest hopes are realized when both the ancestral stock is high and the individual's own life reflects credit upon the family to which he belongs. Properly cultivated plants come from a stock that has felt the uplift of good breeding for generations.

Moreover, the progeny of the largest pumpkin, for example, may be puny because there is no method in the grower's mind. The reserve forces in cultivated plants reach back of the vegetable kingdom and, in the last analysis, are in the constructive, far-sighted mind of the progressive crop grower.

**THE OFFICE OF MAN.**—The ideal tiller of the soil is sovereign and each subject does his bidding. But this is possible only when each seed and section, herb and tree, bears the impress of his royal will, when the ample reserved forces are trained to a profitable productive life by him who knows how to exercise his high prerogative to the result.

**WHETHER** a dead animal body, lying on the bottom of a river, lake or pond will rise is a question of specific gravity and not of the sole efficacy of firing cannon to cause such body to come to the surface, though if the stomach of the body be intact, the body but little mutilated and the period of immersion sufficiently long to evolve gases of decomposition, its specific gravity is lessened to such a degree as to cause its detention on the bottom to be largely due to molecular attraction, and in that case any disturbance of the water, even by vibration occasioned by discharge of cannon, would have a tendency to disturb such adhesion, causing the body to rise to the surface.

**TO TRANSMIT** 100 H. P. with a belt  $\frac{3}{4}$  inch thick, running at 1800 feet per minute, the belt should be 17 $\frac{1}{2}$  inches wide.



## Agricultural Review.

### ALAMEDA.

**BIG TOMATO PATCH.**—San Leandro Register: Jones & Killoran, who have a large place near Decoto on which they raised for the past two years nearly all the tomatoes, cucumbers and peppers shipped from that station, have obtained a lease of 200 acres of land near Halvern, between Decoto and Hayward, and will plant the tract the coming season to tomatoes. Negotiations are now being made with the Southern Pacific Co. to put in a siding or spur track at that point to accommodate shipping from this firm, although if the railroad people accede to the demand it will probably be made a general shipping point for the vicinity.

### BUTTE.

**MACHINE FOR PREVENTING FROST.**—Gridley Herald: Peter Neyns, a German-American of inventive turn of mind, who has lately become a resident of Gridley, has patented a machine by the use of which he expects to be able to prevent damage by frosts in fruit orchards. The machine consists of a fire box with two outlets in which are rotary fans which produce a blast, blowing the heated air on to the ground and into the trees. The whole affair is mounted on a wagon, and the fans are run by a chain belt which is geared to a sprocket wheel attached to the wagon wheel, as in a seed sower, in fact it is designed to be run by the same wheel that the farmer uses to sow his grain. R. M. Beehee is building one of the machines, and as soon as it is completed the apparatus will be tried.

**OROVILLE'S FIRST ORANGE TREES.**—Register: Some days ago in conversation with Henry Bird, one of the oldest residents of the town, he spoke of the first orange trees that were raised in Oroville. If we recall the facts correctly he brought some Mexican oranges from Sacramento and the seeds were given to a lady residing here. The seeds were planted in a box and a number of young trees started. Later four of the trees were sold for \$25 each and four others for \$15 each. One of the first four stands near the home of Marion Biggs, Jr., one is in the yard of the editor of the Register, and two others were moved to the Friesleben ranch. The tree owned by the Register editor has gone through two fires. One side was burned off in the first fire and when the Floyd Taber residence was burned the other side of the tree was burned off. The tree is still green and flourishing, in spite of the damage by fire.

### CONTRA COSTA.

**RANCH SOLD.**—Antioch Ledger: The John Keerins ranch, about 5 miles southwest of Antioch, was sold in Martinez at commissioner's sale to the Savings & Loan Society of San Francisco, Monday, for \$10,500, the amount of the mortgage which the Savings & Loan Society held on the property. The original amount of the loan was \$8900. There were no other bidders. The property consists of 480 acres of good wheat land.

**WILD GESE.**—It is said the geese are so thick around Bethany that the farmers fear fire results unless they can be kept off. Peter Maloney took down his old hlunderhuss the other day and did the two-step into his field. He bagged fourteen. When he reached the house he stopped to look around and there the geese were picking away at the wheat again.

### EL DORADO.

**A BIG FIND OF HONEY.**—Placerville Republican: In the room lately occupied by John Price the floor is covered with honey since the fire. It seems that for years hees have had their home in the garret of the Ditch Co.'s building, and they have never been disturbed. The fire burned through to their home and melted the honey, which caused some of it to run down into the room. Although considerable honey has been wasted, Mr. Gould thinks there is still a ton or more of it there yet. Before repairing the building the honey will be gathered in.

### FRESNO.

**ALKALI EXPERIMENT.**—Fresno Republican: Messrs. Teilman and Baker are at work on the alkali drainage station to be established in Central colony. Carpenters are building a new headgate so as to accommodate the water wheel which is to lift the water out of the underground drain and dispose of it in the canal. The wheel will be 12 feet in diameter and 7 feet in breadth, and ample power will be developed to hoist the water. It will be taken up by means of a cup elevator. Central canal is well supplied with water the greater part of the year, and it was for this reason that the engineers selected this place for the experiment.

**FARMERS OBJECT TO BUYING WATER RIGHTS.**—The Fowler Switch Water Co.

will hold a meeting Thursday that the farmers in that vicinity are looking forward to with a great deal of interest. Since the company was reorganized recently it has proposed putting a water right of \$1.50 an acre in addition to the regular water charge. Heretofore water was furnished at regular rates without any water right. The farmers object seriously to paying the water right, and if it is insisted upon they threaten to condemn enough water for their use and construct their own ditches. There is already organized an irrigation district, with officers, but it has never found it necessary to take steps toward putting water on the ground. Some of the farmers are already putting in pumping plants. Charles Ochs has a plant about completed, and A. E. Mason is figuring on putting one in.

### KINGS.

**WHEAT ON OLD TULARE LAKE.**—James McClellan of Lakeside has been putting in grain down on the Tulare lake bed, and says an immense amount of wheat is being put in there; that on the north side of the lake, from Tulare river on the east to the sagebrush on the west side, there is almost a continuous line of wheat fields, besides a large quantity that has been put in south of this wheat belt. There is still quite an area of water in the center of the old lake bed, but judging from the way grain is going in, the entire lake bed, up to the water, will be in grain. Asked if the people who sowed grain so close to the center of the lake had not taken big chances, Mr. McClellan said yes, but evidently they had guessed all right, for danger from overflow was now apparently past for the present.

### LASSEN.

**TO THE EDITOR:**—We have had a mild and pleasant winter. No snow until last night, and only 2 inches then and very light. Unless we have lots more storm the country will dry up this summer, as there is no snow on the mountains and no water in the streams to speak of. We have had no cold weather, about 20° above is the coldest we have had so far. Most all the hay is fed out to beef cattle, there will be none left over.—G. R. WALES, Milford.

### MERCED.

**CHOWCHILLA RANCH SOLD.**—Sun: The California Pastoral and Agricultural Company, Limited, consisting of several capitalists living in Scotland, has sold the Chowchilla ranch near Merced to Henry Johnston, King's Counsel, Sheriff of Forfarshire, residing in Edinburgh, Scotland, and Alexander Fleming, solicitor in the Supreme Courts of Scotland, also a resident of Edinburgh. The Chowchilla ranch is a tract of land lying west of Morced and comprising about 108,000 acres. The consideration named by the deed is \$1. The actual consideration is easily arrived at. On the Chowchilla ranch deed there appears \$299 worth of stamps. Thus it will be seen that \$598,000 of the price was stamped. Add to this the \$2500 requiring no stamps, and you have a total of \$600,500, which must be within a few hundred dollars of the actual price paid. This would be about \$6 per acre. The Chowchilla ranch has for some years been devoted to the cattle raising industry, and it is understood the new owners will make no change. Mr. Bird, superintendent of the ranch, will remain in charge.

### NAPA.

**MONEY IN TOMATOES.**—St. Helena Star: L. Guiguis, whose farm is near Barro Station, had one-third of an acre planted to tomatoes in 1901. From 400 vines he sold 250 boxes for 50 cents a box, cash when delivered, the one-third of an acre thus bringing him \$125.

### RIVERSIDE.

**THE INDIO MELON CROP.**—Enterprise: In the past year the acreage planted to melons at Indio has increased from 200 to 500, and a moderate estimate of the number of cars that will be shipped during next melon season is 150. There are about 1000 artesian wells in the valley, some farms having as many as six. Three hundred Japanese will be imported next season to pick the melons, this number being now under contract to do the work when the time comes. On account of the heat, which goes to 120°, white men cannot do the work, and resort is had to Japanese.

**RIVERSIDE'S OSTRICH FARM.**—Press and Horticulturist: Five baby ostriches have recently been added to the number of ostriches at F. M. Brown's ostrich farm on Magnolia avenue. They are two months old and about the size of a large turkey. These young ostriches grow with marvelous rapidity, almost a foot a month, Mr. Brown says. Their food is chiefly alfalfa and gravel stones. They eat a little grain and are always glad to get apple parings, potato skins and any vegetable scraps, but will not touch animal food. Two meals a day suffice for their needs.

Between times they eat stones. The five young ostriches eat no more than one cow would in a day. There are now twelve birds altogether at the farm. These seven older ostriches are an ugly lot, with their long, snake-like necks and heavy two-toed feet.

**FEED STILL GOOD.**—San Jacinto Register: Notwithstanding the long continued period of drought in San Jacinto valley, cattle that have pastured on the wild grasses of the fields are looking remarkably well. In the northern part of the valley does this especially apply, for even though the feed may appear at a glance to be very sparse, on closer inspection it shows strong and nutritious.

### SACRAMENTO.

**DUCKS AND THE CROPS.**—Record-Union: John P. Murphy reports that farmers in some parts of this county complain that ducks of the widegeon variety have injured their grain crops, and that the ranchers attribute their troubles to the new game law, which limits at fifty the number of ducks which a man may have in his possession. Proponents of the law scout the idea that the new statute has worked a hardship on the agriculturists, and say that ever since Sacramento county has laid outdoors widegeon have been in the habit of going for every blade of green stuff in sight, and that for years men and boys have been employed to frighten them away with guns and scarecrows. It is further asserted that the ducks do not pull up the sprouting grain, but only nip off the tender tops, which process, the sportsmen say, is really a benefit to the growing grain, having a tendency to make it stronger and more hardy, as "cutting back" vines sometimes improves the grape crop, as well as obviating danger of damage by frost. Still further, the sportsmen make light of the idea that any man could be successfully prosecuted for defending his crops, even if he should kill 500 instead of 50 ducks in a day. Finally, the shotgun experts are yearning to learn the location of the ranches on which they can gather in the daily limit of ducks of any kind, and, if such places can be located, it is safe to say a force of hunters as big as the Boer army would volunteer to guard the grain fields without cost, the hunters to hoard themselves and find their own powder and shot.

### SONOMA.

**MUCH NEW VINEYARD.**—Santa Rosa Press-Democrat: Between Santa Rosa and Cloverdale and in the Sonoma valley a large acreage of new vineyard has been planted. From the line of the California Northwestern Railroad in the former case and the Southern Pacific in the latter, this is particularly noticeable. At the Italian-Swiss colony at Asti the fertilizing of the hundreds of acres of vineyard has been completed. For a term of fifty years the colony has the contract to remove the street sweepings in the city of San Francisco. It has been the plan, whenever cars are needed at the Asti winery for the shipment of wine, instead of being sent up empty, they would be laden with the fertilizer.

**AN EGG SCRAMBLE.**—Petaluma Courier: There is going to be a hot time in Eggville. Shells will pop and feathers will fly. The proud hen will cackle louder than ever and the rooster's crow will be a continual three cheers and hurrah for the great egg center. It is all due to the commission men of San Francisco. In a few weeks they will invade Petaluma like a conquering army. They are renting every vacant store in town and each firm will send three or four men to Petaluma to buy eggs during the coming season. They will make a house-to-house canvass of the chicken ranches and will hold up ranchers coming to town on every highway, and there will be a hot time. However, it will be a cold time for the egglet, for it will go into cold storage, to be sold as a fresh ranch egg 'steen months hence. The season will see prices of eggs kept up better than any time in the history of the local egg industry. It will mean thousands of dollars to the local poultrymen. Anticipating just what is going to happen, nearly all of the ranchers who have been selling by contract have allowed their contracts to expire and will now sell to the highest bidder. Some of the San Francisco dealers are already in the field.

### SAN BERNARDINO.

**WINTER TOMATOES.**—Highland Citrus Bolt: Since New Year's C. H. Rohrer has delivered to Redlands merchants and the Casa Loma hotel more than 100 pounds of fine, ripe tomatoes, the product of a few vines grown on his place. Mr. Rohrer states that with a little protection on the north he can grow tomatoes almost any winter. At 5 cents a pound, the price received by Mr. Rohrer, it would seem like a paying proposition to grow them more extensively, as a winter luxury, by those who have locations exceptionally free from frost. Five cents a pound for

fine, large tomatoes in January is, however, a very modest price, and they are said to have been lately worth six times that in Los Angeles.

### SAN JOAQUIN.

**INCREASED VINEYARD ACREAGE.**—Stockton Independent: This year there will be an unusually large acreage of vines set out in the vicinity of Lockeford. The vineyardists have been realizing such good prices for their grapes that the industry is spreading at a fast rate. Most of the growers cleared up big sums on their crop, and even those who have quite large vineyards have decided to increase their acreage. It has been demonstrated that this part of the county grows exceptionally fine grapes. Among those who have already announced their intention of increasing their vineyards are ex-State Senator Ben Langford, who will put out 240 acres. Ing Bros. will add 80 acres, Keen Bros. 80 acres and J. C. Thompson 80 acres, making a total of 480 acres of vines. Several new vineyards will begin bearing this coming season and a large yield of grapes is expected.

**EIGHTY-SIX DOLLARS AN ACRE.**—Four Chinese who rented a tract of 135 acres of reclaimed land on Roberts island, owned by A. G. Keagle, have just figured up their business for the year and settled with the lessor, and their profit was \$2700 apiece, or \$10,800 for the tract. The returns have been examined by Mr. Keagle and he says the figures are right. The Chinese raised potatoes and beans and made lucky sales, with the result stated. Island renters are figuring on big profits the coming season, for the outlook in the East is for a dry season and the reclaimed lands of San Joaquin county can all be irrigated. Mr. Keagle has leased 1225 acres to Italians and Chinese for the next cropping season, and he expects big returns. The renters will cultivate the ground thoroughly and will raise potatoes, beans, colory and asparagus.

### SANTA BARBARA.

**COOPER'S OLIVE CROP.**—Ellwood Cooper reports that his crop of olives for this year will be remarkably good. On his ranch are 12,500 trees, and it is thought the year's output will be 3000 boxes, or 36,000 bottles. The olives now being harvested will be converted into oil at the factory on the ranch. The first shipments to market will be in April next.

### SANTA CRUZ.

**FRUIT NOTES.**—Watsonville Pajornian: Careful estimates made by packers this week estimate the stock of apples on hand at about fifty carloads.—Fred S. Gifford shipped the largest car of Newtowns yesterday sent out this season—900 boxes, consigned to Liverpool.—Land owners, tree planters and surveyors are very busy in this valley at present laying out ground for orchard purposes and planting trees. There will be a very heavy planting of apple trees in Pajaro valley this year.

**LITTLE BROWNIES IN THE FRUIT BUSINESS.**—It is predicted that the Japanese are very liable to have control of the strawberry business of Pajaro valley within a couple of years. They already control the situation in the Sacramento strawberry district. Recently a convention or meeting of the leading Japanese contractors from various sections of the State met in San Francisco and among other matters discussed the strawberry and apple crop of the Pajaro valley. The proposition of Japs harvesting the entire apple crop of this section was favorably considered.

### SUTTER.

**DUCKS PLAYING HAVOC IN GRAIN FIELDS.**—Wheatland Four Corners: The wild ducks are playing havoc with the grain fields along the Feather river in the vicinity of Nicolaus, if reports from that section are correct. It is stated that the birds are so numerous that land owners who have had "no trespassing" notices posted are removing them and inviting the hunters to do their worst. It is stated that the ducks swarm out into the fields by thousands and do material damage to the grain. It is almost impossible to keep them off, and when put to flight they will circle about out of reach of the guns and light again.

### YOLO.

**WHAT THE LITTLE POTATO DOES.**—Woodland Democrat: The potato crop is one of the most profitable produced in this county. Both sweet and Irish do well. Last season one farmer planted five acres to potatoes, the yield was over 1100 sacks and he sold them for \$1.50 a sack. The cost of cultivating, digging and marketing was less than \$400. Another farmer from four acres had a yield of 900 sacks and they netted him \$1100. The average price last season was a cent a pound. The indications are now that good prices will prevail this season and that the area planted to potatoes will be considerably increased.



## FRUIT MARKETING.

### The California Fresh Fruit Exchange.

By MR. A. P. SPRAGUE of Los Angeles, at the Fruit Growers' Convention.

At almost every annual State Horticultural Convention for six years past, the necessity for some organization of the fresh fruit growers has been most strongly urged. At the convention at Sacramento three years ago the matter passed to the appointment of a committee for preliminary organization, and the committee did considerable work endeavoring to secure a car line to be owned and controlled by the growers, but finally abandoned the attempt.

Again, a call was issued for a special convention of fresh fruit growers to secure the organization of that interest last year.

The meeting was large and enthusiastic, I am told, and appointed a committee to secure organization upon the basis of a contract like that of the Raisin Growers' Association. This committee did some hard campaigning in the endeavor to so shape things as to do business in fresh fruit shipping upon that basis. It was a plan, however, that did not very generally commend itself to experienced fruit men as practicable, and so upon the advice of Mr. Naftzger of the Southern California Fruit Exchange, and at my strenuous urgency when called into council as one of the temporary directors, the old plan was abandoned, and it was determined to take up the work upon the exchange basis, or selling delivered plan.

By this time the shipping season was just at hand, and but little time remained in which to organize the business in which to take care of the crop now almost ready for shipment; but it was vigorously undertaken by organizing the California Fresh Fruit Exchange and subordinate local organizations at a few important places of shipment—among others Loomis, Penryn and Newcastle, and later on at Rumsey and Placerville. Time did not permit organizations at other places, but carload shipments were also made from Sacramento. Owing to the general failure of early fruit at Rumsey and Placerville, because of the frost, but three cars were sent out from the former place, and an equal number from Placerville, although fruit from both places was sent to other shipping points to make up cars. We contracted with the Southern California Fruit Exchange for the use of all of their agencies, so that for the fresh fruit business they were ours absolutely and exclusively, and they received instructions regarding our business solely from our office so as in no way to confuse or mix up the two lines of business.

Many of them had had no previous experience in fresh fruit sales, but they had an extensive and favorable business acquaintance with the men in their part of the country who were buyers of fresh fruit, because they had for years been selling these same men citrus fruit, and they were quick-witted clear-headed salesmen who very soon acquired such special knowledge of the new business as to enable them to hold their own with "the other fellows." Not one single car went forward which did not yield a profit beyond costs of freight and refrigeration, although owing to faulty refrigeration and freight delays the fruit broke down so badly in two cars as to leave little margin of profit.

The business of the California Fresh Fruit Exchange up to the first of November amounted to \$208,000 gross, which was done at a total cost, including every expense, of \$14,000 in round numbers, including funds now on hand. About 208 full cars were shipped East, and sales were made in thirty-eight different cities, the chief distributing centers of the United States and Canada.

We have refunded to one of our local associations \$2900, the proceeds of savings in purchase of supplies and of charges for car loading, and proportionate amounts also were refunded to the smaller associations.

We have not lost a dollar from bad debts. Our members who have shipped with us for the whole season quite unanimously agree that they have received a net amount for their fruit considerably greater than their neighbors, who shipped through commission firms or who sold for cash in the best cash markets. It would be too much to assert that no shipper was disappointed at any time, but to those familiar with the business it will not seem strange that we cannot say this. One association sent out only three cars, all in one week, and all upon a poor market. One of these cars was met upon arrival by a vicious cut in prices on the part of the agent of an old commission firm. It could not be diverted as it was in a railroad pocket, and hence its net returns were not very satisfactory. Another of these cars was badly delayed in transit, and hence arrived in poor condition and sold only fairly well, while the third sold well upon a poor general market. The other shipments in small lots from this association were burdened by excessive local express charges. The same conditions existed with the other small association which was able to ship for but a small part of the season, so that at these points the demonstration has not been fully satisfactory; but at every point which was able to ship throughout the entire season, the unanimous feeling of the growers is that we have fully demonstrated the entire success of the exchange method of co-op-

eration in handling fresh fruits, and so have cleared the way for placing the industry upon a firm, self-helpful basis. Some people may think lightly of this movement because we handled so small a portion of the total output this season. But this is by no means warranted. It would not have been wise to undertake a very much larger business with only a few days in which to prepare for it, on the part of ourselves and of our agents. But with the season's experience and with five months' time in which to get ready for next year's business, we should be able to do with greater economy and success several times the volume of business done this year, and a larger volume with a greater variety of fruit to ship would remove many difficulties experienced this year. The cost of doing the business decreases rapidly as the volume increases.

In this review of the season's work I have taken it for granted that our methods are understood by all, but perhaps a word of explanation may be desirable.

Whenever there is fruit sufficient to load a car daily, or on every other day, they may form an association to take charge of assembling the fruit and loading cars. Three or four growers with large acreage may do this, but generally a larger number of smaller growers unite for this purpose, adopting articles of incorporation and by-laws to enable them to do business legally. This association is represented by one of their number upon the board of directors of the California Fresh Fruit Exchange. All supplies for all of the associations are purchased by the central exchange, and full records of every individual shipment are kept both by the local association and by the central office, thus being able to check each other and prevent mistakes. When the car is loaded two copies of its manifest are sent at once to the central office, one tacked up in the car, and one kept on file. The car is then in charge of the central office, which, together with the general Eastern agent, determines the destination and sale. Reports of sales are received daily by wire, and auction sheets are mailed from sales in auction markets. These are at once bulletined to the local association, so that every grower may know how sales are going from day to day.

The agents remit promptly after each sale to the central office, and this then sends to the manager of each local association the individual account sales with checks for balances due; these, after checking up, he hands to the growers when they next come to deliver fruit. At the close of the season, from the refund paid to it from the central exchange, the local association distributes in dividends to its members the money in excess of the amount needed to pay their corporate expenses for the season, a grower's profit resulting from the economies of co-operation, entirely outside of what they receive from the sale of fruit.

Every possible effort is made to assist growers who may need temporary aid when this can be extended without risk to the organization. We do not speculate, but undertake to sell the product for the grower with the utmost possible economy and efficiency.

At present, although we have had a most successful season, we feel that we are able to accomplish but a small part of the good which we hope to see secured by this organization; for so long as thirty or forty shippers are juggling with 5000 cars of perishable products in a hundred various markets, thousands of miles away, each in utter ignorance of the other's destinations and diversions, there are bound to be most serious market interferences, resulting in glutts with ruinously low prices and in others by famines which most seriously check consumption, so that the business of growing fruit for Eastern shipment which should be safely profitable year by year, is now but a gamble.

By this chaotic way of marketing, at a conservative estimate we come short at least 20 cents per box of the average prices which might be obtained were the fruit to be intelligently distributed by a single agency, careful to see that each market is kept supplied up to, but not exceeding its capacity for consumption. This would save to the fresh fruit growers of California \$1,000,000 per year—a comfortable sum this would be for growers to divide, even in this prosperous season. Such a result will easily double the value of every fresh fruit shipping ranch, and its prosperous tide would be felt in every channel of trade on the coast. Now fellow fruit growers, why not proceed to accomplish this? The co-operative path lies plainly before us. We need but to go forward in it to reach freedom and safety. For years the fresh fruit growers have been told that the exchange methods, which were conceded to be successful in marketing citrus fruit, could not be used with fresh fruit. The Fresh Fruit Exchange has this year shown beyond question, in times of good markets and of poor markets, for we had such in the Salway season—that this plan is admirably adapted to fresh fruit marketing.

It is true that the friendly business relations existing between many growers and the commission firms that have loaned them money and shipped their fruit, make many men hesitate to break away from such firms; we must respect such feeling, but question their judgment. However, rather than that the fresh fruit interest be barred from such great success by friendly consideration for these

great shipping firms it would be better to pension them off with a few hundred thousand dollars per year simply to keep out of the way, for even then the savings would be so enormous that such payment would hardly be felt. But, of course, they would not take such an attitude as that, for they are managed by able business men who would easily find another field of action.

Again, many growers whose hearts are with this movement are so tied up by small loans, all too easily obtained from commission firms, that they cannot ally themselves with the movement. This is a most serious condition—one of practical peonage in many cases—and it must receive the most careful consideration of all who are interested in the future of the fruit industry.

In each community that ships fruit some man there should be clear-visioned enough to see the advantages of such co-operation and unselfish enough to be willing to start the movement in his own neighborhood.

Every such one will receive prompt assistance from the Fresh Fruit Exchange, but without such local initiative we shall be able to extend these organizations but slowly.

Co-operation is the one thing needful; the one condition absolutely essential to the development of the fruit areas of the State, for in no other way can we survive the competition in Eastern markets threatened by the immense areas now being planted in favorable sections of the East; and it is also the only way in which we can secure from the giant corporations, which nominally serve us, concessions such that year after year we may have some fair share of the products of our labor.

## THE GARDEN.

### Does It Pay to Have a Family Garden?

TO THE EDITOR:—About Jan. 10, 1901, the writer fenced in a piece of land 50x60, with the intention of raising a few vegetables for home use. One bale of 5-foot 2-inch mesh wire was used on three sides, the residence making the fourth side.

The land was first covered with one cord of stable manure and plowed before the fence was put up. The soil was a very heavy and sticky adobe. Being close to Coyote creek, we hauled about 3 cubic yards of fine sand and spread over the entire surface, and to this was added 2 cubic yards of well-rotted sheep manure.

A succession of vegetables were planted and as many as four distinct crops were raised on some parts of the ground. For irrigation a ½-inch faucet furnished the water, and we made it a rule to water each individual row once every tenth day. We made a V-shaped ditch as close to the row as possible and ran the water in this; and as soon as the roots were well wet, the water was run in the next row. We never let any water spread over the surface and covered the ditch as soon as the water had settled. The next time the ditch was made on the opposite side of the row. Visitors often remarked, "I do not see how you have everything looking so green when the ground looks so dry on top." We kept the surface dry and fine to hold the moisture and to keep down the weeds. As fast as one crop was ready to come off another was planted. Every Monday we sowed radishes; every two weeks a row of corn was planted, also beans.

Now for some of the results: From twelve individual plants forty-two large Bidwell Casaba melons were taken; seventeen Ruby King peppers were taken from one plant at one time; one New York purple egg plant weighed 4 pounds 4 ounces and was 8½ inches long, 7½ inches thick and 19½ inches in circumference.

The prices quoted below are mid-season prices, while nearly everything was from two to four weeks ahead. For instance, the first was used on dates mentioned: Peas, Easter Sunday; corn, July 3; tomatoes, July 8; Casabas, July 20. The amount and value of crops was as follows:

25 dozen cucumbers.....	\$ 2 50
150 heads lettuce.....	3 00
82 heads cabbage.....	4 10
209 pounds peas, pods.....	10 45
20 pounds edible pod peas.....	1 00
42 Bidwell Casabas.....	4 20
90 heads White Plum celery.....	4 50
125 bunches onions.....	6 25
8 bunches asparagus.....	40
10 bunches rhubarb.....	50
Radishes.....	5 00
Cayenne and Ruby King pepper.....	1 00
23 dozen sugar corn.....	2 30
215 pounds bush and pole beans.....	6 45
10 watermelons.....	50
20 cantaloupes.....	1 00
14 banana melons.....	1 00
50 pounds perennial Lima beans.....	2 00
10 quarts shelled Lima beans.....	1 50
Egg plants.....	1 50
300 pounds tomatoes.....	3 00
25 dozen early beets.....	2 00

Total.....\$64 15

A little figuring will show that it will take a little over fourteen such pieces of land to make an acre, or a little over \$900 per acre. We are using the same



ground this year and will keep an accurate account of time expended. In another year we will report the expenses as well. We want to try to raise a five-pound egg plant.

J. LUTHER BOWERS.

Coyote, Santa Clara Co., Jan. 21.

This is very interesting and should be suggestive. Who will start now and try to beat it?

### Vegetables at Corning.

We are glad to see constant indication of the growing popularity of vegetable crops, both in field and garden. They will add much to the wealth and prosperity and comfort of our people. At a recent meeting of the Maywood colonists there was a free discussion of the matter, as reported in the Era:

Geo. F. Atkins, superintendent of the cannery, spoke regarding the necessities of the cannery. Speaking of peas, he said that he should have at least 500 acres of that vegetable. He aims to put in pea machinery that will cost about \$1500. This machinery will take the peas, vines and all, like so much hay, and pick, shell and grade them. Regarding tomatoes, he stated that as they came in this year—400 or 500 boxes at a time—they were merely a drop in the bucket. While he could not handle the small tomatoes last year, he could do so the coming season, having an order for an almost unlimited supply of tomato pulp. This again will take new machinery. He knew the Chinamen who had supplied him with tomatoes last year had made money. He had paid them over \$1000 for tomatoes, although a great part of their product was sold to peddlers. These Chinamen had in but eight acres of tomatoes last season, but wish to contract for eighty acres this year. As Chinamen do not work for fun, the chances are they were well paid. A party from Los Angeles is also anxious to contract to plant, stating that he pays \$35 per acre rent for his land there and gets but \$6 per ton for his tomatoes. All fruit and tomatoes put up by the cannery had ready sale at good prices, and the Chicago firm who took them wants to contract for this year's output. What he wants is, first of all, peas, and plenty of them, to be followed by onions, berries, beans, asparagus, etc., including pumpkins. Mr. Atkins will furnish the seed at cost price for all who will put in the stuff. He stated that the cannery is going to run and is going to be supplied. If our colonists fail, labor can be supplied by a firm in San Francisco. There is a great opportunity for the employment of labor in the cannery, which means the disbursement of a large amount of money among our people. The soil is here, the water is here and the market for all you can produce at your door.

## THE DAIRY.

### Ropiness in Milk and Cream.

By DR. ARCHIBALD R. WARD of the University of California at the Creamery Operators' Convention.

Ropy milk or cream is objectionable on account of its unwholesome appearance rather than because of any known harmful effect caused by its consumption. The slimy, viscid condition of the milk is exceedingly disgusting to the consumer and its occurrence constitutes a serious menace to the success of a milk route. This fault in milk is one of financial rather than of hygienic importance.

**NOT DISEASED MILK.**—Much of the abhorrence of ropy milk is induced by the mistaken belief that it is in some way caused by a disease of the cow's udder commonly called garget. The udder of a cow affected with garget may contain a yellowish, thick, viscid, purulent liquid which is obviously unwholesome at the time that it is drawn from the udder. Unfortunately, dairymen frequently speak of this unwholesome fluid as "ropy" or "stringy" milk. The milk fault referred to in this connection is entirely different and bears no relation to the health of the cow. Except for the unfortunate double meaning of the words, there is no connection between the ropy milk of garget and the ropy milk that occasions complaints from the patrons of a milk peddler. There is no occasion for mistaking one for the other. "Garget ropy milk" is readily noticeable when drawn from the cow, and on standing yields a viscid, yellowish or bloody sediment. It is merely a morbid product of the diseased udder. Such slimy milk when added to wholesome milk does not cause the latter to become slimy.

The other kind of ropiness, the one occurring in milk from a healthy udder, appears only after the milk has been drawn from the cow at least twelve hours. Twenty-four or even thirty hours may elapse before its appearance, the time being governed by numerous varying conditions. The surface of the vessel of milk and, therefore, generally the cream, becomes viscid and will string out in long, fine threads.

Skim milk, however, is just as liable to become ropy. The affected milk shows no alteration in color, no sediment, and practically no alteration in flavor.

Cold does not prevent the occurrence of the slimy condition. The writer has repeatedly observed the trouble in places where the temperature ranged from 45° to 50° F., conditions ordinarily considered favorable for the preservation of milk.

**THE CAUSE.**—Ropiness in milk is caused by a spe-

cies of bacteria called bacillus lactis viscosus, first described and named by Adametz, who found them occurring in creek water. Each individual bacillus possesses a slimy, viscid envelope or capsule, which causes it to adhere tenaciously to its fellows and to other objects. When a sufficient number are present in a fluid—milk, for instance—they bring a viscid condition by mere force of numbers. Milk containing these bacteria is not noticeably changed until they have multiplied to such an extent as to become crowded into contact with one another.

Within the limit of the writer's Eastern observations all of the milk dealers complaining of trouble from ropy milk made a practice of standing the milk in open cans in ice water to cool. The water was always found teeming with ropy milk bacteria. Under these conditions the milk could hardly escape contamination by the bacteria of ropy milk, which, as already observed, were present in the water. The splashing of water incident to the daily addition of ice, together with that caused by the placing and removal of cans, was amply sufficient to explain the presence of ropy milk in cans standing under those conditions for any length of time.

That the ice water surrounding the cans was a constant source of contamination for the milk within the cans was easily demonstrated. To several quantities of sterile milk were added a few drops of ice water, which caused ropiness in milk.

Purely as an experiment, to determine the truth or falsity of the assumption that ice water contributed largely to the infection of the milk by the bacteria, it was determined to add some substance to the ice water capable of killing the bacteria present. A disinfectant to be available for such use must have no smell, must be cheap, and must not corrode the tinware which necessarily comes in contact with it. Potassium bichromate, which retails at 35 cents a pound, fulfilled the conditions sufficiently well for experimental purposes. Experiments in the laboratory showed that a solution of this substance in water in the proportion of one part to one thousand is effective in preventing the growth of bacillus lactis viscosus. Roughly, one ounce of potassium bichromate to each cubic foot of water in the tank will make a solution of the required strength. This substance is poison, and reasonable care was necessary in using it for this purpose. In the strength of solution used the few drops which might spatter into the milk would do no harm. Each day when ice was added a proportionate amount of potassium bichromate was added to keep up the strength of the solution in the tank.

At the time the bichromate was added the tank contained several cans showing ropy milk. When the ropy milk was emptied the cans were carefully

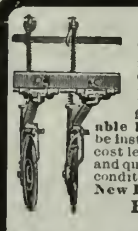


### When Seed is Sown

with the Cahoon Broadcast Seeder you get returns that make you glad. The one hand sower that is, and always has been a complete success. Saves fully one-third of the seed, and four-fifths of the labor. Puts seeds just where they belong, and is so simple and so well made, that it just can't wear out. Ask your dealer to let you see one. We send circulars free.

GOODELL COMPANY, 38 MAIN ST., ANTRIM, N. H.






### The New Kentucky

Interchangeable Shoe and Disk Drill

meets exactly the demands of the farmer who wants both a shoe and disk drill and who does not wish to make the expenditure necessary for two drills. In case of the Kentucky one drill does the business. Our disk bearing—absolutely dust proof, specially chilled will wear as long as the disk and is only two inches wide over all, leaving abundant room for clearance of clods, sods, rubbish, etc. Disks easily set at any desired angle. Our Detachable Heel Shoe is already too well and favorably known to tell about it here. Shoe heel may be instantly detached and sharpened at almost no cost. New heels cost less than sharpening old style shoes. Shoes and Disks easily and quickly interchanged on the New Kentucky Drill. Fit every condition of soil and all varieties of crops. All about it in our New Illustrated Catalogue. Copy mailed free. Ask for it.

Brennan & Co., S. W. Agricultural Works, Dept. P, Louisville, Ky.

Shipped from Minneapolis, Minn., Spokane, Wash., Council Bluffs, Iowa.



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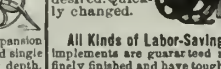
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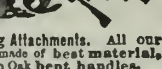
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The only implement made which can be used as seeder and cultivator for 2 wheels as desired. Quickly changed.

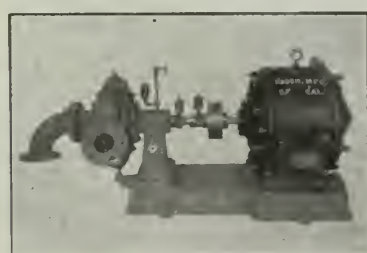


**High Arch Expansion**  
Hoe is double and single wheel combined. Adjustable to any depth. Highly finished and have tough Oak bent handles.



Popular Prices. Improved for 1902. Send for catalog describing complete line and book.

AMES PLOW COMPANY, 52 Market Street, BOSTON, MASS.



## KROGH CENTRIFUGAL PUMPS

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Capacity up to 100,000 gallons per minute.

They are made Horizontal and Vertical and Direct Connected to Steam or Electric Power. Our Pumps have given the highest efficiencies ever recorded.

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It costs no more than inferior styles. We claim that Adam's Green Bone Cutter is the best because it is the only Ball Bearing machine on the market. It works on the shear principle, turns easier, cuts faster and cleaner, and prepares the bone in better shape than any other. Write at once.

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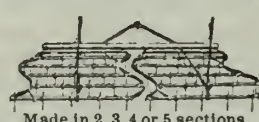
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# PATENTS.

We attend to all business connected with U. S. and Foreign Patents, Caveats, Designs, Trade-Marks, Copyrights and Labels; prepare Assignments, Licenses and Agreements, and furnish opinions as to Patentability, Infringement, etc. DEWEY, STRONG & CO. (Established 1860), 330 Market St., S. F., Cal., and 918 F St., Washington D. C.



scalded. Fresh milk was placed in them and they were left standing in the bichromate solution. No ropy milk appeared in them. Had there been any carelessness in scalding the cans and strainers after containing ropy milk, the use of potassium bichromate would have been ineffectual.

**PREVENTIVES.**—The experience in dealing with the outbreak of ropy milk in question leads to the conclusion that with proper cleanliness of utensils, disinfection of the floor and extra care to prevent contamination by water ropy milk may be prevented. Unfortunately, there have not since occurred opportunities for conducting further experiments upon the use of disinfectants in the ice water. The use of some harmless, cheap disinfectant in the ice water promises to be the most effectual means of preventing trouble from the species of water bacteria in question. While they have not been found by the writer in hydrant water in large numbers, it is evident that they find suitable conditions for rapid multiplication in the cold, milky water of the tank in the darkened room. Extraordinary care to prevent spattering of water into the cans, or covering them, ought to accomplish the same results as the use of a disinfectant.

Several experiments were conducted to determine the part played by the floor dust in the dissemination of the trouble. Three basins were sterilized by heating in a steam sterilizer for several hours. They were then distributed about the creamery in places where they would be likely to collect dust particles deposited. After standing for two days they were tested to determine whether or not ropy milk bacteria were mixed with the dust particles that had accumulated. Into each of them was poured a small quantity of sterile milk, which was allowed to remain a minute and then poured back into the tube from which it first came. All three quantities of milk became ropy, thus demonstrating that bacillus lactis viscosus may be conveyed about by the air. Quantities of sterilized milk left in basins likewise became ropy.

These simple but instructive experiments lead to the conclusion that the dust of a room, once thoroughly infested with ropy milk bacteria, may become a very important factor in the dissemination of these organisms.

In discussing the relation of water to ropy milk it has been assumed that the dealer does not intentionally add water to the milk with dishonest intent. When a dealer indulges in such a questionable practice he courts trouble from ropy milk. The writer has had his attention called to a San Francisco milk dealer who complained to the producer about the slimy milk. A sample of milk collected at his milk depot in the city showed by lactometer and Babcock tests that pure milk had been diluted down to the city board of health standard before retailing. The less such people complain about ropy milk the better for themselves.

**CONCLUSIONS.**—Ropy milk contains bacteria that are responsible for its viscid condition. These bacteria live naturally in water. Measures for the prevention of the trouble must be directed towards preventing the bacteria from getting into milk. Following are some of the more important measures that should be taken to stop the trouble and to prevent its recurrence:

After milking at night the milk pails and strainer cloth should be washed and scalded before using in the morning, or a second set, thoroughly clean and scalded, should be used in the morning. The practice of merely rinsing pails and strainers in cold water at the barn at night offers an opportunity for the introduction of bacteria into milk directly from the water.

If the cows wade in mud and smear the udders with dirt and filth, put a stop to it. By this means many objectionable bacteria get into milk by falling into the milk pail.

The floors of all rooms where ropy milk has been kept should be disinfected with a mixture of five parts of crude sulphuric acid to ninety-five parts of water.

All milk utensils should be scalded most thoroughly daily. Never let cold water come in contact with utensils unless they are scalded before using for milk again.

Exercise the greatest care to prevent even a drop of water from the cooling tank getting into the milk. That occurrence is probably the most common cause of trouble from ropy milk. If water must spatter about, the cans standing in ice water should be covered.

The dealer who deliberately waters milk violates every precaution that should be observed to prevent ropy milk.

Utensils after washing and scalding should stand upside down to prevent the accumulation of dust on the inside.

#### A Successful Creamery.

**TO THE EDITOR:**—The Isleton Creamery Co. held their annual meeting on Saturday, January 18, and decided to increase the capital stock of the company from \$10,000 to \$50,000, and re-elected the present board of directors, as follows: Hart F. Smith, Mrs. E. A. Runyon, P. H. Gardiner, J. H. Denosier and

J. L. Aldrich. Hart F. Smith was chosen president, Mrs. E. A. Runyon vice-president and P. H. Gardiner secretary and treasurer.

The company has declared a dividend of 7% on the capital stock for the past year. The business increased five fold since commencing on December 15, 1900.

The company has a skimming station in operation at Walnut Grove and one at Clarksburg. The patrons are well pleased and the stockholders more than satisfied with the venture.

Isleton, Cal.

#### Aiding the Creamery Patron.

By JAMES E. THORP at the Creamery Operators' Convention.

This subject is a good one for every butter maker to consider, for if the dairymen make the dairy business profitable there is a certainty that there will be work for most of the butter makers, and what is to their interest should be of interest to us.

It was once said by a noted professor of dairy husbandry that a butter maker should be a walking, talking encyclopedia; that he should be posted on all subjects relative to the dairy business, and even on subjects of the kindergarten work, that he might stand "pat" with all people of the neighborhood, including the farmers' wives and daughters.

In order to make any business profitable it requires small expense and good returns. This can only be realized by a wide-awake man, since competition is so keen.

To accomplish this in the dairy business we should constantly impress upon our patrons that it takes cows—good cows; good, cheap milk-producing feed; labor, with a few good, reliable laborers; cleanliness and, last of all, a good, reliable butter maker, who can make the best article out of the milk and obtain the highest possible price.

**GOOD COWS.**—We should advise all patrons to keep the best cows, for that is one stepping stone in the business. To start with good cows, from a line of prepotent butter-producing ancestors, is quite easy, providing you have the capital; but as many of our patrons have their places already stocked we should aim to help them develop good herds by the assistance of the Babcock test, the scales, the feed. We should be willing to do some testing for them, and should show them that in order to get reliable tests they should take time and carry composite samples.

We should be posted on breeds and breeding, on veterinary work pertaining to the cow, and on feeding and judging of stock.

We will suppose that all the cows of the neighborhood are of the best quality. Now, we should show them why sire, dam and calf should be fed properly.

**CALVES.**—We should try to impress upon the minds of the patrons that the calves should not be stunted; for they are the foundation of our coming cows.

Show them the proper way of feeding calves, and be sure not to let them overfeed with skim milk, for we know that the average farmer has very poor ideas as to feeding skim milk.

Do not let them underfeed with foods containing protein, for these foods build up muscle and bone, both these are required to build up the growing cow.

Our calves have fast developed by the proper care and feed, and soon we find that we have some new cows. They seem much more profitable in appearance, and we should now endeavor to find the proper feed for them.

**FEED.**—"The eye of the master fattens his cattle." It seems that very few farmers fully realize the value of different feeds. They will feed a beef steer and a milch cow the same ration, irrespective of results, and it is here that we can help them, for with plenty of good, cheap feed a poor cow will give returns. We must show them that with good cows success is theirs.

A cow will do much better if she enjoys her food, and we should try to impress this upon them. Cows do not like to eat what they have trampled upon, and they should be given a change of rations every week or two, even though it is grain, pasture or roughage rations.

It takes food containing much protein to make a cow produce an abundant supply of milk, therefore we should constantly remind our patrons to experiment on alfalfa, oats, barley, soja bean, field peas and other foods, all of which are rich in protein content, in order that they might obtain the cheapest appetizing protein food.

The milking should be done by men of even dispositions, for a cow is a very sensitive piece of machinery, and will not take the abuse of an irritable man with a stool and give the return of which she is capable.

In this way we can show our patrons that dairying can be made profitable with good cows and a little knowledge of feeding, and if he is not by this time worked up to such a pitch that that he will kick you off his ranch for meddling with his affairs, shake his hand and remind him that his monthly returns are due and exceedingly high, owing to your careful work in handling the pure milk he has delivered, and show him that you are working for the best interest of the community.

#### Industrial Notes.

**ASBESTOS** is one flexible substance that electricity will not burn.

At a temperature of 150° F. 5 cubic feet of water will weigh 305.8 pounds.

**MULTIPLY** the diameter of the wheel in inches by .2618: the product will be its circumference in feet.

**FINE** dry coal dust is just as dangerous as coal or petroleum gas, and will explode with equal force under the same conditions.

A **CUBIC FOOT** of stiff clay will weigh 135 pounds; of sand, 95 pounds. The "angle of repose" for the first named material is 55°, for the sand 30°.

**WHERE** the weir opening of a flume is 72 inches wide, and the depth of water flowing over the weir is 5½ inches, there flows over 346.44 cubic feet, or 2591.4 gallons, per minute.

**TO STEEL** an axe, first cut the old blade off, then split the axe open, take 1 inch of square steel, forge down and weld on, then shape up, grind and temper. It is cheaper, however, to buy a new axe.

**WEIGHT FOR WEIGHT**, there is not much difference in the fuel value of petroleum of different gravities, the average estimate of the fuel value being that about three and one-half barrels oil equal one ton of good bituminous coal.

In a calm, quiet atmosphere coal dust or petroleum gas will lie upon the ground or at the bottom of any vessel, but by walking among it or by agitating it in any way it mingles with the air and a flame will ignite and explode it.

**GASOLINE ENGINES**, owing to the intense heat generated in the cylinder by the explosion, require a higher grade of cylinder oil than do steam engines. A 30 H. P. gasoline engine will use about 300 gallons of water per day. A steam engine of the same power would require 3000 gallons daily.

**THE** sag of a belt which should be allowed when it is first put on, and when it is being tightened later on, may be found by multiplying the decimal .0165 by the distance between the centers of the shaft in feet. The product will be the sag in inches under ordinary conditions. Where the distance is 20 feet the initial sag would be  $20 \times .0165 = 3.3$  inches.

A **U. S. PATENT** can be obtained for a land claim with a hot mineral spring on it. The patent expressly reserves such springs from the grant where they are salt springs, but it is doubtful if the reservation has any force. The last ruling of the Land Department is that lands containing mineral springs not of a saline character are subject to sale under the agricultural land laws. Sulphur springs are not regarded as saline.

An applicant at a U. S. land office to secure timber must swear to a non-mineral affidavit. He must take oath that he knows the conditions of the land at that time by personal observation; that the land is not occupied by any person or persons; that there are no mining claims, lodes or mineral deposits to his knowledge on said land. Coal, salines and coal oil claims on a tract of land exclude it from entry as timber land.

**LESS** than 1% of the weight of petroleum remains as ash after combustion; the ratio of ash in coal is 5% to 10%. Petroleum can be burned under any kind of boiler, and its use may alternate with that of coal. To apply the petroleum it is only necessary to introduce a pipe carrying it and another pipe with compressed air or steam into the furnace, and arrange suitable nozzles to insure a mixture of the oil in a finely divided state with the air or steam.

**AS TO** the number of board feet in a stick of timber 4x4 inches at one end and 8x8 inches at the other, the stick being 24 feet long, there are two ways of arriving at a correct answer. Add the areas of the two ends to four times the area of the center section and multiply by one-sixth of the length; or, multiply the areas of the ends and extract the square root; to this add the areas of the two ends, and multiply by one-third of the length. The answer by either process is 74½ feet.

**THE** cessation of an advertisement in a popular and well circulated journal indicates to the public: 1. Either that the firm has quit business or is closing it up. 2. Or have found their goods unsalable in competition with better advertised and better pushed goods, and, therefore, withdrawn from the general market. 3. Or the firm has lost enterprise or got into a rut, any of which diminishes public confidence and also makes buyers distrustful of liberal or prompt treatment.

**IN** firing with petroleum, if the fire should go out, as it sometimes does when water is mixed with it, the oil continues to spray onto the hot furnace, generating a gas. If you attempt to light the fire the gas will explode with violence. First shut off the flow of oil, then blow the gas up the smokestack, then you can light the fire with safety. Never venture near a barrel or other vessel which has the petroleum in it, with a naked light, as it is liable to have gas in it, and is more dangerous than when full of petroleum.

**THE** grade of a ditch depends in some degree on the kind of ground through which it is made. Ordinarily, water should flow at the rate of from 180 to 200 feet per minute. The diameter of the pipe does not determine the pressure; this last is proportional to the head. A pipe line of 6-inch or 36-inch pipe with the same fall or head will each give the same pressure. Theoretically, the water forced through a nozzle should be able to attain the same height as the head; but in practice it will fall short. The friction of water in pipes increases as the square of the velocity, and is also largely determined by the condition of the pipes, whether old or new, clean or foul. With a sluice having a grade of 1 foot in 20, 40 miners' inches (60 cubic feet) per minute should wash 150 cubic yards every twenty-four hours.



## THE HOME CIRCLE.

## The Old Organ.

I can see it now a-standin' in the parlor  
prim and neat,  
With its walnut case and yellow, shiny  
keys,  
With its dark blue velvet cushion and its  
music rack complete;  
(Its only drawback was a rather crazy  
wheeze)  
'Twas the first one in the neighborhood  
and cost a monstrous sum,  
An' 'twould even make the very rafters  
ring!  
When Tildie pulled the stops out, 'twas  
the sign for us to come—  
Then around the organ we would stand  
an' sing.

An' what pleasure, when the young folks,  
on a Sunday afternoon,  
Came a-trailsin' in to spend a social  
hour,  
From the other farms around us; some  
wus lovers, come to spoon  
On the sofa! Some wus radiant as a  
flower.

An' the ole folks in the sittin' room would  
stop their talk a while,  
Then their door open wider they would  
fling,  
An' their faces full o' sunshine oft would  
light up with a smile,  
As around the organ we would stand an'  
sing.

You could hear,  
Sweet and clear,  
Our young voices, all a-blendin';  
How they rang  
As we sang  
Old-time tunes on high ascendin',  
"Nellie Gray,"  
"Far Away,"  
"Mollie Darlin'," "Pray Don't Tease  
Her,"  
"Rock-a-Bye,"  
"Hush, Don't Cry,"  
"Jordan's Banks" and "Ebenezer."

An' I mind one face especially, I know in  
them old days—  
One face that's sorter clearer than the  
rest.

'Twas framed in jet black ringlets, and  
her sweet an' winsome ways  
Fairly set my heart a-throbbin' in my  
breast.

Ofttimes now, in the gray twilight of my  
life's drear afternoon,  
I can see her when I gave to her the  
ring—  
I slipped it on her finger while the others  
some old tune  
Round the organ they had started off  
to sing.

Ofttimes now, while softly noddin' in the  
frelight's ruddy glow,  
I think that I'm a boy once again.  
I hear the same old voices, kinder hum-  
min' soft and low,  
An' it fills my heart with sadness an'  
with pain.

In my throat a lump keeps risin', for I'll  
hear 'em never more,  
To my ears that old sweet music naught  
can bring—  
For they're gone, the ones who made it  
in the happy days of yore,  
When aroun' the organ we would stand  
and sing,  
Old-time tunes on high ascendin',  
"Nellie Gray,"  
"Far Away,"  
"Mollie Darlin'," "Pray Don't Tease  
Her,"  
"Rock-a-Bye,"  
"Hush, Don't Cry,"  
"Jordan's Banks" and "Ebenezer."

—Phil H. Armstrong in N. Y. Sun.

## The Verecundity of Langfield.

When the men of the service left  
Valdez to build the military lines  
through the interior of Alaska, Lang-  
field went with them.

He was undeniably plain, under-  
sized and oversensitive, and that was  
why he felt certain that Dolly could  
never love him. To be sure, he had no  
intention of loving her, but when six  
feet two of well-developed manhood,  
in the person of Tom Perry, came down  
from Circle City prospecting, Lang-  
field found that intentions and love had  
very little to do with each other.

Vainly he stood erect, but not one cu-  
bit could be added to his stature, and  
every morning the square of looking-  
glass impressed afresh the redness of  
his hair upon him.

Tom and Dolly had known each  
other in the States, and Langfield  
watched with hopeless pain the re-  
newal of their friendship. She had

grown shy with him since Perry came  
and there could be but one reason, he  
argued. He did not blame her; there  
was nothing in him to inspire a wo-  
man's love, and Tom— So he packed  
his flute and knapsack and left with  
scarcely a farewell.

The men were not fond of Langfield.  
He had a way of shrinking into him-  
self, that only Shivers, the camp mas-  
cot, a lank mongrel Siwash with the  
stump of a tail, understood.

Mornings, when the "Top Sergeant"  
gave his first call through the camp,  
it was the warm tongue of Shivers  
that brought Langfield into touch with  
the day, and later, when the company  
lined up around the mess tent for their  
rations of coffee and beans, the man  
would seek a secluded stump for a ta-  
ble, with the dog huddled by his side.

Langfield seldom joined the camp-  
fires. But when the fever broke out,  
Langfield was the first to offer his ser-  
vices. He was not afraid of contagion  
he told the sergeant, and anyway,  
there was no one at home who needed  
him. After that he and Shivers took  
up their quarters in the hospital tent.

The fever had its run, but only one,  
thanks to the nursing, was borne up  
the trail and laid away under the snow.  
Langfield planed a piece of spruce  
scantling and drove it in by the mound,  
but his hand was unsteady, and his  
eyes were heavy and dull.

The "Top Sergeant" on his rounds  
the next morning found him sitting up  
in his blankets. His face was swollen  
and discolored, and he was talking  
excitedly to Shivers.

"You mustn't let Dolly get the fe-  
ver," he said; "she's so little. Nor  
Tom—promise me you won't let Tom."  
He leaned over and looked into the  
dog's pleading eyes. Shivers whined  
and thrust his muzzle into his master's  
palm. "She couldn't help loving him,"  
Langfield continued defensively. "You  
know she couldn't yourself!" He fell  
back on the pillow and tossed rest-  
lessly for a moment. "It'll be cool up  
there under the snow," he began again,  
"and I won't be heavy to pack. And  
say—" He sat up, pulling the dog  
close to him, "maybe she'll forget—  
that my hair was—red."

The men were very tender to Lang-  
field after that, and Shivers seldom  
left his bedside.

When, some weeks later, he became  
convalescent, he seemed smaller and  
slighter than ever, and his hair shone  
more vividly red against the pinched,  
white face. They carried him out into  
the sunshine, but his eyes wandered  
regretfully up to the snow.

In a month he was at the post again,  
doing the work of two men, with  
scarcely the strength of one.

He came down the mountain one  
night an hour behind time. The trail  
was slushy, and the early gray twi-  
light lent a soft indistinctness every-  
where. Suddenly he paused and stood  
looking intently at a line of fresh  
tracks in the path. His first thought  
was of Shivers. He always met him,  
but seldom so far from the camp.  
Lighting a match, the only one he had,  
he bent closer. The prints were too  
clean cut for a dog; the opposites al-  
most overlapped each other, and Shiv-  
ers was broad-chested. Cautiously the  
man crept on, peering about for an-  
other mark he knew. It was there—  
a slight depression in the mud, like the  
fringe of a feather. Only the edge of  
a shaggy tail made that. He stood  
up and looked around him. He was  
not afraid of death, but he had a de-  
cided preference regarding its me-  
dium, and a she-wolf hunting for a  
family dinner was hardly to his liking.

The camp was three miles away, and  
the underbrush made a cross-cut im-  
possible; besides the snow still lay in  
the ravines. There was one thing to  
be done, and, drawing his hat securely  
down, he started forward, then paused  
again, with his head raised to listen.

From somewhere there came a faint  
cry, weak and indistinct, but undeni-  
ably human.

Langfield made a trumpet of his  
hands. "Hel-lo!" he shouted, and  
strained his ears for the reply.

Most perpendicularly over the rocks.  
Creeping to the slippery edge, he  
peered over and called again. A faint  
voice answered.

A steep, shelving path was just vis-  
ible, and he clambered down to it,  
scratched and torn by the brambles at  
every step. A little farther on a roll  
of blankets impeded his way, and he  
knew that somewhere in the ravine be-  
low he would find a prospector.

The man proved to be a big fellow,  
but the light was too dim to see his  
face. The force of his fall had wedged  
one leg between the crevices of rock,  
and it took Langfield's entire strength  
to extricate him. He pressed his can-  
teen to the stranger's lips, and rubbed  
him vigorously, but it was half an  
hour before he could get him up the  
path. All the while, in his over-  
wrought fancy, he heard the cry of the  
mother wolf for food, and once he was  
sure that a pair of luminous eyes were  
watching them from the dusk.

"It's no use," said the man at last,  
"I can't make it!" and he sank limply  
on the bank.

Langfield took hold of his coat and  
rolled it into a pillow, then started be-  
low again. In the outfit there would  
be matches, and blankets enough for  
the night.

Just as he reached them a long,  
whining howl broke the stillness. An-  
other followed, and another. They  
were tracking along the trail.

To the man, straining every sinew  
under his heavy load, it meant but one  
thing. Mechanically he held to his  
burden and stumbled on. His head  
swam dizzily, and the brush about him  
seemed to swarm with uncertain  
shapes. With a superhuman effort he  
hoisted the blankets over the last little  
ledge of rock and drew himself up be-  
hind him.

The sick man lay where he had left  
him, but creeping toward him on the  
bank was a lithe, gray shadow. It was  
less than a dozen feet away. Langfield  
drew his revolver, then, by the sudden  
spit of fire, he saw what he had done.

"Shivers!" he cried. There was a  
glad whine of recognition, as the dog  
tried to drag himself toward him.  
Langfield was kneeling beside him in  
a moment. "Shivers, old friend," he  
said, and somewhere on his "journey  
to the dog star," Shivers heard. His  
stump of a tail wagged an answer, and  
in his glazing eyes there was a look of  
perfect trust.

The night wore on. Slowly the gray  
skirts of dawn swept across the  
eastern sky.

Langfield still sat with the dog in his  
arms. The prospector could not see  
his face, but the slight drooping shoul-  
ders seemed familiar. The pain was  
growing unbearable, and he groaned.

Langfield started. "Yes, yes," he  
answered absently, "I'd forgotten."

He put the dog gently from him and  
stood up. The morning light was  
flooding everything and it fell upon the  
two men as they looked into each  
other's eyes. Langfield drew in his  
breath with sudden sharpness. The  
other muttered an oath and leaned  
weakly back against the bank.

"Tom Perry!" ejaculated Lang-  
field, taking a step toward him.  
"You!"

The man nodded.  
The lines on Langfield's face were  
tense and drawn, and he steadied him-  
self with an effort. "Well," he said at  
last, "it's three miles to the camp, and  
we'd better be moving."

There were a few drops in his can-  
teen. He offered them to his com-  
panion, converted himself into a prop  
for the wounded side, and the slow,  
painful journey down the trail began.

Neither of them talked much. The  
mist hung midway on the mountain,  
and, when they emerged from it, the  
company's quarters lay on the ledge  
below. Already the camp was astir.

The two men upon the path paused  
exhausted. Langfield eased the sick  
man down and threw himself beside  
him. He had not eaten since the day  
before, and was weak and giddy. The  
solitude was oppressive. Blue-faced  
glaciers smiled mockingly out of the  
ravines, a raven croaked from the al-  
ders, and the memory of Dolly seemed  
hovering in the light. For the first

time Perry's helplessness tempted him.  
Why should this man have everything  
which he had been denied? He felt  
again the dumb, pleading eyes of Shiv-  
ers. Shivers had loved him; he had  
never known that his master was  
plain and red-headed, and Shivers—  
was dead.

Langfield mechanically slipped his  
hands to the sheath in his belt, stole  
a sideways glance at his companion  
and saw that his eyes were closed. He  
drew out the knife and held it behind  
him. His breath came in short, con-  
vulsive gasps.

Just then Perry gave a stifled moan.  
The sound brought Langfield to his  
senses. What was this he had intended  
to do? A fit of trembling seized him.  
He rose to his feet, though he reeled  
as he did so. There was a swift move-  
ment of his right arm, and something  
glanced in the light and fell far below  
them in the brush.

"No one needs me," he thought,  
"and Tom—"

"Come," he said aloud, "we must  
get you down for—your wife's sake."

The man did not reply at first.  
When he did his voice was a trifle  
husky.

"I have none," he said.  
Langfield stared at him. Why—  
Dolly—he blurted out. "She—" He  
began and stopped again, but Perry  
understood.

"No-o," he replied with an effort,  
"she didn't want me." He turned his  
head and looked unseeing across the  
valley. "There was some one else,"  
he said.

"Some one else?" Langfield stupidly  
repeated.

"Yes," answered the other, "and it  
seems the fool couldn't understand!"  
There was a moment's silence. "She's  
waiting till the company's ordered  
back," he added, with a whimsical  
smile.

Langfield drew his hand across his  
forehead. The snow, high up on the  
mountain, seemed a swimming sea of  
white; the little stream beside them  
roared like a cataract in his ears.

Perry made an effort to rise, but fell  
back in a spasm of pain.

"She loves—my God, man!" he  
cried vehemently, "are you an idiot?  
She loves you!"—The Ladies' World.

## The Old-Time Spelling Bee.

The fact that a spelling bee is to  
form a part of the evening's entertain-  
ment need not be indicated upon the  
programme, it being a part of the fun  
to catch people unawares. After the  
arrival of the guests the choice of a  
teacher and two leaders is effected by  
ballot. The two leaders then stand out  
at the end of the room opposite each  
other, and each chooses alternately one  
of the company at a time to represent  
his side until all have taken their places  
in two lines. The teacher, who is sup-  
plied with a book, then gives out a  
word to the person at the end of the  
line at her right. If the word is cor-  
rectly spelled the next word is given  
out to the person at the end of the op-  
posite side at her left. If this person  
fails to spell this word correctly, she  
must immediately leave the line, and  
the same word is put to number two on  
the opposite side. If the word is cor-  
rectly spelled she is privileged to choose  
one person from the opposite line to  
step over to the foot of her own line.  
Another word is then given to the op-  
posite opponent, and so on down the  
lines.

It often happens that two equally  
proficient spellers are pitted against  
each other for some time, when the  
contest becomes very exciting. It is a  
good plan, lest the contest become  
wearisome, to limit the time for the last  
participant. If at the end of six  
minutes the winner has not failed on  
any word given, he or she becomes di-  
rector of the revel that follows, and  
must be implicitly obeyed for the rest  
of the evening. The first duty is to  
announce a recess. Having been pre-  
viously instructed, he or she leads the  
way to an adjoining room where, upon  
a table in a pile, lie boxes of various  
shapes and kinds, neatly tied, which are  
distributed among the young women,



after which it is announced that each box contains a small school luncheon, and that a young man accompanies each. She then proceeds to distribute the young men as she has the boxes. Each young woman then shares her luncheon with her partner. Should the box contain an apple, a sandwich and a cake, these must be halved. After recess follow games or music or recitations, as the winner of the contest wills.

### Sight or Hearing.

Which would you rather be—deaf or blind? Here is a subject for debate by clubs or by the widespread debating societies known as "breakfast tables."

It seems to us curious that there should be any doubt concerning the question propounded. But investigation shows that such doubt does exist.

Many a man will tell you that he would rather be blind and hear what is said around him than lose his hearing and continue to see. Presumably the choice would be depend on the mental makeup of the person choosing. The man accustomed to look inside of his own mind for resources and for interest would, we should say, not find deafness a hopeless curse. The deaf man with sight can read and compel the greatest mind of every age to talk to him. He can concentrate his thoughts at all times and in all places, for there is none of the world's distracting racket to divert him.

The blind man is shut out from the beauties of nature, and, greatest loss of all, he is unable to study the wonders of the universe as spread out in the heavens at night. He finds himself limited to his own thoughts and to the idle talk of those around him.

Is there not in the marvels of one sunset more inspiration than in all the talk of a hundred men?

Is there not in the study of a young child's face more to be learned than in much empty conversation?

The greatest curse of deafness is that it shuts us out from the wonderful inspiration of music. But we consider this loss more easily borne than inability to improve the mind with study of the visible universe.

Talk this subject over with your friends. You will find it better worth discussing than the chances of rain or shine, or other of life's trivialities.

The power of the human mind is shown most vividly in the accomplishments of great men whose genius has surmounted the horrible affliction of deafness or blindness.

Homer was blind, Beethoven was stone deaf. Milton was blind when he wrote "Paradise Lost." What could physical sight have added to his marvelous mental vision? Of himself he says, "Wisdom at one entrance, quite shut out." But the affliction which would utterly destroy mediocrity adds fire and purpose to Milton's genius:

So much the rather, thou celestial light,  
shine inward,  
And the mind, through all its powers,  
irradiate.  
There plant eyes that I may see and tell  
Of things invisible to mortal sight.

All history of pathos since the world began fails to match the story of Beethoven's affliction. One of the three greatest beings born on earth, he was fated never to hear except within his brain, and through his inward sense of harmony, the greatest works of his genius.

For earth's greatest picture of pathos, study this scene: Beethoven's genius had culminated in the production of his two greatest works. A magnificent ovation was prepared for the master who has given such happiness to the mind. A vast assemblage was gathered together. Beethoven, the deaf genius, was to conduct. The moving baton in his hands does not guide the musicians. His noble forehead is wrinkled deeply, his gaze fixed on the leading violinist before him. The "leader" hears not a sound of his own marvelous music, and he "leads" by watching the bowing of the violinist who interprets his work. Applause shakes the building. The thousands of spectators stand in their seats, waving their arms, shouting,

cheering. Not a sound is heard by the author of all the excitement. He looks straight ahead, unconscious that frantic admiration has drowned the sound of the music. A woman advances, turns Beethoven gently round, that his eyes may behold the tribute of admiration to his genius. He beholds thousands of men and women in tears, called forth by sympathy for his affliction.

Let that scene move your sympathy, but let it also save you from possible affliction.

One piece of carelessness made Beethoven deaf and filled his life with sorrow. After violent exercise he sat with his ear near an open window. Cold and inflammation resulted, and he was soon hopelessly deaf.

Bear in mind that similar danger threatens all of us at all times under similar conditions.

You may see some foolish young man racing to catch his ferryboat. He catches it and stands in a cold wind on the front deck. His coat collar is turned up and he thinks he is safe from cold. But his ears are wide open, and the icy draft strikes full upon the delicate membrane of the drum. He thinks he is safe from cold in his ears as from cold in his hair. He is foolish.

We ask you to remember that after hard exercise your weakest spot is the inside of your ear. It is a good thing to get fresh air. But if you are warm from running or from sitting in a hot office keep your hands over your ears for a few minutes. Let yourself cool off before exposing the ear passages to sudden cold.—New York Journal.

### Melancholy.

All things are touched with melancholy,  
Born of the secret soul's mistrust,  
To feel her fair, ethereal wings  
Weighed down with vile, degraded dust.

Even the bright extremes of joy  
Bring on conclusions of disgust,  
Like the sweet blossoms of the May  
Whose fragrance ends in must.  
Oh, give her, then, her tribute just,  
Her sighs and tears and musings holy!  
There is no music in the life  
That sounds with idiot laughter solely;  
There's not a string attuned to mirth  
But has its chord in Melancholy.

—Thomas Hood.

### The Care of the Eyes.

An authority on the care of the eyes emphasizes the fact that in this day of reckless misuse of the eyesight the rules laid down must consist chiefly of warnings regarding things to be avoided. His advice in the main is as follows:

First.—Do not use the eyes in poor light, or too far from a good light.

Second.—Do not have the body in the way of the light, nor the light directly in front. One is almost as bad as the other. The light should fall without interruption from one side.

Third.—Do not use the eyes much when recovering from illness, or when very tired.

Fourth.—Do not use the eyes until they become watery, or show signs of indistinctness of vision.

Fifth.—Do not work with head bent over. This tends to gorge the vessels of the eyes with blood and to produce congestion.

Sixth.—Do not read lying flat on the back or reclining, unless the book is supported in the same relative angle and position as when erect. This is so difficult to do that it is better not to attempt it.

Seventh.—Do not go a single day without glasses after you should put them on. Glasses may not be becoming, but they become necessary for all that.

Eighth.—Do not burn your candle at both ends. Do not study or work both early and late.

Ninth.—Do not ignore the close connection of the eyes with the general health. "He who considereth the eye as a little kingdom set off by itself, with separate laws and administration, will make a great mistake."

Tenth.—Do not ignore even the slightest hint from the eye that everything is not right with it. Nature is the only

walking delegate who never issued orders for a strike arbitrarily.

Eleventh.—Do not take any quack advice about the eye, but so long as it does its work with ease and comfort let it alone. It is all right. Be temperate in its use, as in everything, and all will be well.

### There's Many a Slip.

A letter, bless me, what a beauty,  
I know it is full of love,  
I'll open it up in my sanctum  
Lest I should let out the dove.  
There's an odor of Kate about it—  
I can guess just what's inside,  
Each word I am certain's more precious  
Than the gold on royal bride.

I'll kiss it once more as a foretaste,  
Of the bon bon writ within,  
I know there's a feast of sweet phrases,  
Then here goes, let me begin.  
Hello! What's this? here's a grand heading  
And nice lithographic frill—  
"Dear Sir, we take the liberty  
To enclose your tailor's bill."

—William Lyle, in Journalist.

### Pleasantries.

Willie: "Pa, this paper says: 'Beef makes brawn and fish makes brains.' Why do fish make brains?" Pa: "Probably because they travel in schools; now run away and play."

"Now, Johnny," said the Sunday-school teacher, "you may tell us what a prophet is." "Why," replied Johnny, "it's a fellow that's always lookin' for a chance to say 'I told you so.'"

Caller: "And are your papa and mama going to take you to Europe with them when they go?" Tommy: "Yes'm." Caller: "And aren't you afraid?" Tommy: "No'm. I ain't afraid o' nothin'. I've been vaccinated."

Stylish lady visitor to small boy, while waiting for hostess to come down: "What is the matter with Fido, that you are watching him so closely?" Small Boy: "Mamma said that your hat was enough to make a dog laugh, and I wanted to see him do it."

"This," said the proud young wife as she passed the plate to her trusting husband, "is White Mountain cake." The deluded man made several attempts to bite it. "What do you think of it, dear?" she asked. "Well," he said with a feeble smile, "it is very realistic."

## DOMESTIC ECONOMY.

### Domestic Hints.

MILK TOAST.—Toast as many slices of bread as are required; butter carefully, and stand in the oven to keep hot. Take two tablespoonfuls flour and two of butter and stir them in a saucepan until the flour is cooked; add a pinch of salt and half a pint of hot milk, gradually stirring all the time. Let it boil up and pour over the toasted bread.

BROILED HERRING.—Cut off the head and tail of the fish, and split it. Loosen the skin near the neck with a knife, and holding it firmly between the knife and finger, pull it off. Split the fish with a sharp knife and remove the backbone; then soak the pieces for half a minute in water that is nearly at the boiling point. Drain this off and broil the pieces over a glowing fire.

MEAT CAKES.—Mince fine any kind of cold meat, add a quarter of its weight in breadcrumbs, a few drops of essence of anchovy, little parsley, pepper, salt and egg to bind and moisten the whole; flour the hands, roll meat into little balls size of a marble, then flatten them with back of a spoon, dip in egg and then in fine breadcrumbs, fry in butter until delicate brown; garnish with boiled Italian paste.

JELLIED CHICKEN.—Cover a small chicken with water, and boil until the meat slips from the bones and the water is reduced to half a pint. Pick out the meat in good-sized pieces, removing all fat and bones. Skim the fat from the liquor and add pepper and salt to taste, with one-half an ounce of gelatine.

When this dissolves pour over the meat. The liquor should be seasoned highly, as the chicken absorbs much of the flavor. Put the mixture in cool place in deep bowls to form.

POTATO SALAD.—Ingredients: Six medium-sized potatoes, one onion, one-fourth of a cupful of vinegar, half a cupful of salad oil, one-half teaspoonful of salt and one-quarter of a teaspoonful of white pepper. Wash the potatoes and boil them without peeling. As soon as they are done drain off the water, and peel them. When they are cold cut them into thin slices, and mix with the onion, which should be chopped fine. Pour the seasoning over potatoes and mix well. Mayonnaise may be used for the dressing, instead of the oil and vinegar and gives the salad a delicate flavor.

CAULIFLOWER, PARISIAN STYLE.—Boil a good-sized cauliflower until tender, chop it coarsely and press it hard in a mould or bowl, so that it will keep its form when turned out; put the shape thus made upon a dish that will stand the heat and pour over it a tomato sauce. Make this by cooking together a tablespoonful of butter and flour in a saucepan and pouring upon them a pint a strained tomato juice, in which half an onion has been stewed; stir until smooth and thicken still more by the addition of three or four tablespoonfuls of cracker dust; salt to taste, turn the sauce over the moulded cauliflower; set in the dish in which it is cooked.

### Hints to Housekeepers.

Grass stains may be removed by dipping them in molasses, and then washing this out with clear water.

Try removing tar from either the hands or the clothing by rubbing well with lard, and then thoroughly washing with soap and water.

Never wash the face in cold water immediately after exercising in the sun, or while you are very warm. If you wish to wash it before it cools, use warm water.

It is said by a hair specialist that a lotion made of four ounces of bay rum and one ounce of lump sulphur, broken into small pieces (not powdered), is excellent to keep the hair from growing gray.

When an insect gets into the ear don't try to dig it out, as you will only push it in deeper. Put a drop or two of sweet oil into the ear; this will kill the insect, which may be removed by a stream of warm water from a syringe.

One would be surprised to know how many uses can be made of tissue paper, an article that abounds in most households, as the shops employ it extensively in packing delicate goods. Probably few people have tested its merit as a pencil mark eraser, yet it serves the purpose admirably, and on paper of some textures often acts more satisfactorily than the rubber eraser. For cleaning and polishing glass of any description, from the fine lens of a pair of spectacles to the common window glass, tissue paper is unexcelled. Bought fresh and new in packages of a hundred sheets of white and colored it costs little, yet gives an added daintiness in many ways. It brightens bureau drawers, it makes a pretty wrapping for the small package that one often finds it necessary to carry, it adds far more to the effect of a present than ordinary paper, stuffed in waists and sleeves it prevents wrinkling and crushing when packed. Silk and lace that need pressing are protected by tissue paper, and wrinkled veils pressed under it emerge with renewed freshness. If one cannot get an iron, a gas globe or lamp shade (not the chimney) is generally within reach, and on its surface one may smooth veils and ribbons with tissue paper between. Children can find a fund of amusement in tissue paper, cutting little dolls, holding hands in "ring around a rosy" fashion, or making flowers or fashioning dainty dresses for dolls. Still another use is to fold the tissue paper many times and tuck it under waist or coat as a chest or shoulder protector in cold weather.



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## THE STOCK YARD.

### Cattle Feeding in Arizona.

By J. S. DAY, Buckeye, at the annual meeting of the Arizona Agricultural Association.

Feeding cattle in the Salt River valley has become during the least fourteen years one of the leading industries, and is therefore worthy of our consideration at this time. We are very favorably situated in this valley in respect to grazing cattle on alfalfa pasture. What the particular difference between this valley and the various other places is I am not prepared to say, but it is a fact that in some States it is unsafe and practically impossible to pasture cattle on alfalfa. There is very little sentiment in the business of feeding cattle, because of the fact that the final result to the animal is death as soon as it becomes fat enough and the owner can find a buyer who is willing to pay a satisfactory price. Therefore, it is from a purely commercial point of view that we must consider the subject, or how to make the most money in the shortest length of time in the business of feeding cattle.

**A GOOD START.**—The first essential is, if possible, to secure animals of good quality and breeding. The difference in weight between animals of a given age that are raised upon the alfalfa of the valley and those brought in from the range is very great; first, because they are uniformly of better quality, and, secondly, because they have plenty to eat. Grade steers at fourteen months old weigh 900 pounds, which is equal to the weight of the average 3-year-old steer from the range. The above weight can be increased by the judicious selection of either of the beef-producing breeds, such as the Shorthorn, the Hereford or the Polled Angus.

I am inclined to think there is no breed just as good as the Durham or Shorthorn as a beef-producing animal, if he is given abundance of feed and does not have to travel far to get it.

Feeders are realizing the fact that the cost of production increases with each month of the age of the animal. The first 500 or 600 pounds on a calf costs very little. At six months a calf can be made to weigh 400 pounds; at twelve about 700 pounds, and will gain about sixty pounds each month until he is eighteen or twenty months old. From that time on the gain will be proportionately less with each succeeding month; but there is no reason to keep them longer, because the buyers are always willing to take all the natives they can get, and very few calves that are born in the Salt River valley are left to eat alfalfa after they are two years old. If any of them escape that long they are generally selected for Christmas beef. The majority of cattle that are fed in the valley are brought in from the adjoining range and arrive during all seasons of the year; but most of them come about May or June, and are placed on pasture after the first crop of alfalfa has been cut.

**CHANGE TO ALFALFA.**—The transition from the mountains to the valley is very great. In the mountains they were accustomed to the native grasses, an abundance of shade and pure water, for which is substituted in the majority of cases an alfalfa feed with little or no shade and a stagnant pool of water. Notwithstanding this, after they be-

come accustomed to the taste of alfalfa, they gradually increase in weight. I consider the great essential to the profitable feeding of cattle to be an abundant supply of pure water and plenty of shade. It is not always practicable to have a well and pump the water in all pastures where cattle are fed, but it would be possible to fence the tanks and keep the cattle out of the water and pipe it to a trough.

The cattle are generally in a healthy condition when they reach the valley and the loss from disease is very little; but after they have acquired a taste for alfalfa there is danger of bloat under certain conditions.

I think it well to state that the properties which cause bloat are contained in alfalfa in all its stages, from the time it first makes its appearance until it is put into a stack or pressed into a bale. The degrees differ, but the properties are the same.

The surest preventive is to never let the animal get hungry. It depends in a large measure how fast they eat the alfalfa whether it bloats them or not. The loss is generally experienced when cattle are moved from one field to another or when they break through a fence onto a fresh piece. It is best to remove them to a fresh field before they become tired of the old one. Move them after they have had their morning's meal and are about to lie down. By that time the dew, if there is any, will be off, and the cattle will eat slowly and will gradually become accustomed to the new field, and ordinarily the danger from bloat will be avoided. But, if the animal should unfortunately eat too fast and become uncomfortably full, the only sure remedy is the quick application of the knife on the left side in a line with and about 4 inches in front of the hip bone. This remedy applies to range cattle, but is not necessary for cattle that are gentle or can be handled; but by getting them in such position that the front feet are considerably higher than the hind ones, relief will soon be obtained and the animal will recover.

**AUTUMN FEED.**—There is very little choice of feed during the summer months. Alfalfa is about all there is, but as autumn approaches sorghum is added to the bill of fare in some localities. Sorghum and alfalfa together make an ideal ration for cattle. It is a peculiar fact that, where allowed to do so, they will invariably feed on the alfalfa during the day and the sorghum at night. Where sorghum can not be obtained, it is advisable to commence feeding hay not later than October. Hay at \$3.50 or \$4 per ton can be fed profitably to steers, if said steers can be sold at 4 cents per pound. Volunteer, so called, or young grain, can be profitably fed in the early months of the year, but in no case should the cattle be shipped direct from the green feed. Hay should be fed for some time before shipment is made.

**PROFITS.**—The average price of pasture for cattle is \$1 per month, at which price the man who sells the pasture and the man who owns the cattle can both make a reasonable profit.

There are a large number of cows brought to the valley, and the question of feeding them at a profit is rather problematical. If a man has his own ranch and is in no particular hurry to dispose of them at any given time, but is willing to keep them long enough to increase in numbers, it is very probable that the young stock born on the ranch will sell for enough to help out the old cow. There are some cows that can be



## A Lame Horse

is neither valuable for use or sale. It is better not to have a lame horse.

## Tuttle's Elixir

cures permanently all forms of lameness, curbs, splints, sprains, thrush, &c. Equally good for internal use for colic, founder, pneumonia, distemper, &c. Guaranteed to cure.

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**Tuttle's Family Elixir** cures rheumatism, sprains, bruises, etc. Kills pain instantly. Our 100-page book, "Veterinary Experience," FREE.

Tuttle's Elixir Co., 88 Beverly St., Boston, Mass. 437 O'Farrell St., San Francisco, Cal. Beware of so-called Elairs—none genuine but Tuttle's. Avoid all blisters; they offer only temporary relief if any.

## You Can Save Your Horse

from Spavin, Ringbone, Splints, Curbs and all forms of Lameness by a prompt and liberal application of that old reliable and well known remedy—

### Kendall's Spavin Cure

It has the unqualified endorsement of every man who has ever used it. Here is a sample of what thousands say for it.

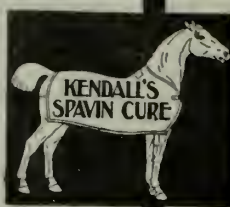
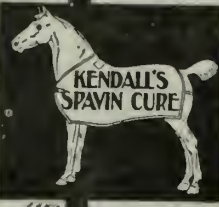
**CURED FIVE BONE SPAVINS.**

Montrose, Colo., July 14, 1899.

Dr. B. J. Kendall Co., Dear Sirs:—Please send me one of your "Treatise on the Horse." Your Kendall's Spavin Cure is the best in all the world. I have cured five bone spavins on my horses and would not be without it for anything. Yours truly, G. W. ROBUCK.

It is a most valuable liniment for family use—splendid for bruises, sprains, lame back, rheumatism, etc., etc. Sold by all druggists at \$1; six bottles for \$5. Our book, "A Treatise on the Horse," mailed free. Write at once and address

**DR. B. J. KENDALL CO., Enosburg Falls, Vt.**



bought in the spring at the ordinary prices and pastured from four to six months and be sold to the local butchers at a profit.

**BLACK LEG.**—It necessarily follows that if a feeder buys a mixed bunch of range cattle he will have quite a number of calves born on the ranch. They will grow fast, get fat and be very susceptible to black leg, which fatal disease can be guarded against or prevented by timely vaccination.

The disease is not communicated from one animal to another; but if a black leg carcass be skinned and the blood be allowed to enter the soil, the germs may live in the soil for years, and any vegetation that should grow thereon is liable to convey the disease to other animals. The best way to dispose of an animal that has died with black leg is to burn it up completely or bury it not less than 6 feet deep.

**LOCAL CONDITIONS.**—The business of feeding cattle in my part of the valley is paradisaical. More money could be made if it was not such a good place to pasture cattle on alfalfa. During the spring and summer months, with plenty of water, a sufficient amount of alfalfa can be grown to pasture a large number of cattle, and the tendency is to get more cattle at that time than it is possible to carry through the winter. It is so very much easier to turn a bunch of cattle in a big field of alfalfa and then ride under a cottonwood tree and watch them eat, than it is to pitch hay on a wagon; but if it was as unsafe to pasture alfalfa in this valley as in some other places, more hay would be put in the stack, and more money would be made, because as winter approaches alfalfa makes slower growth, and generally quite a number of men find they have too many half-fat cattle on their pastures and not enough hay to carry them through the winter. This makes them anxious to sell, which is the buyers' opportunity. They canvass the whole valley and post themselves on the situation, and are unable for several months to get all the cattle they want at a low price, from men who will, for various reasons, sell with little or no profit to themselves; but the men who have made provision to hold and feed their cattle through the winter receive a price that is remunerative and satisfactory for the time and capital invested in the business of feeding cattle in the Salt River valley.

### Feeding Wheat Flour to Horses.

To THE EDITOR:—Your correspondent, Mr. A. Warren Robinson, in communication to your issue of the 18th inst., mentions wheat as a feed for horses. We have been feeding wheat flour to work horses and driving stock for some four years and find it the cheapest and best horse food. We feed it with chopped hay. The hay is first slightly dampened in a large trough, then the wheat spread on top of the hay and the whole thoroughly mixed with a large scoop shovel. The wheat is ground flour fine and, being glutinous, sticks to the hay, every piece of hay carrying its proportion of wheat flour. The grain must be ground extremely fine, for all coarse particles will be shaken from the feed, drop to the bottom of the manger and be lost.

We find wheat to be cheaper than barley, pound for pound, as, no matter

how fine barley may be ground, much of it will not adhere, but be lost in the manger.

Another advantage is that we are able to thresh closer, as cracked wheat is as valuable as whole wheat for feed, and we can blow out all small grains and find a home use for them, raising the grade of the wheat that is for market.

We also feed chopped hay and ground wheat to milk cows, making this sloppy, and to fattening hogs, and find it in every way superior to any feed we have yet tried.

Of course, it would not do to feed wheat alone to any animal except a hog, as the grain is too concentrated a food. It must be mixed with hay or straw.

THOMAS D. CARNEAL.  
J. West Martin Ranch, Livermore.

STATE OF OHIO, CITY OF TOLEDO, ss.  
LUCAS COUNTY,

FRANK J. CHENEY makes oath that he is the senior partner of the firm of F. J. CHENEY & Co., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of Catarrh that cannot be cured by the use of HALL'S CATARRH CURE.

Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1899.

{SEAL} A. W. GLEASON,  
Notary Public.

Hall's Catarrh Cure is taken internally and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free.

F. J. CHENEY & CO., Toledo, O.  
Sold by Druggists, 75c.  
Hall's Family Pills are the best.

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**Buffalo, 1901**

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Those who want the Best

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## Breeders' Directory.

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**HOLSTEINS**—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except list on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. F. H. Burke, 626 Market St., S. F.

**C. A. STOW**, Stockton, Cal. Importer and breeder of Red Poll and Shorthorn Cattle. Poland-China and Berkshire Hogs.

**BULLS**—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

**PETER Saxe & son**, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

**J. H. GLIDE**, Sacramento, Cal. Have 70 choice Durham Bulls for sale.

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### POULTRY.

**WELLINGTON'S IMPROVED EGG FOOD** for poultry. Every grocer and merchant keeps it.

**POLAND-CHINAS**—5 first, 3 second, 3 sweep-stake prizes State Fair 1901. S. P. Linugren & Sons, Klugsburg, Fresno Co., Cal.

**SANTA TERESA POULTRY FARM**, Eden Vale, Santa Clara Co., Cal. Illustrated catalogue with show record for 1900, free. Agents Eclipse Aluminum Leg Bands; sample 2 cts.

**FOR BREEDING** Hare and Poultry in small lots, address Cottonwood Farm, Pleasant Grove, Cal.

**MEAT MEAL**—Best quality, lowest price. White Leghorn eggs. A. Warren Robinson, Napa, Cal.

**BROnze TURKEYS**. Ed. Hart, Clements, Cal.

### SWINE.

**CHAS. C. PERKINS**, Sacramento, Cal., breeds the finest pedigreed Berkshires. Young stock for sale.

**P. H. MURPHY**, Perkins, Sac. Co., Cal. Breeder of Shorthorn Cattle and Poland-China Hogs.

**CHAS. ASHLEY**, Linden, San Joaquin Co., Cal. Breeds Berkshire, Poland-China and Essex Hogs.

### BREEDERS' SUPPLIES.

**POULTRY** supplies of all kinds. Send for my new price list and booklet, "HOW TO FEED FOWLS FOR PROFIT." CROLEY, 508 Sacramento St., San Francisco, Cal.

## Oakland Poultry Yards.

### BREEDERS OF ALL THE LEADING VARIETIES OF FOWLS.



1317 Castro St.  
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Manufacturers of  
Pacific Incubator  
and Brooder.

Send for Catalogue  
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Poultryers' Hand  
Book and Guide."  
Price 40c.

## French Draught Stallions FOR SALE.

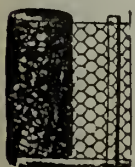
**HUGO**. REGISTERED NO. 9438. Weight 1800; bred by J. D. Patterson, Oxnard, Cal.; foaled April 18, 1898. Sire, Leopold 4250 by imp. Louis 3299; dam, Henrietta II 5779 by imp. Montebelle 3298; second dam, imp. Lady Henrietta I 2419.

**MARQUIS**. REGISTERED NO. 9017. Weight 1750; bred by J. D. Patterson, Oxnard, Cal.; foaled March 25, 1895. Sire, imp. Montebelle 3298 by Caesar; dam, imp. Maria I 2450 by Hercules.

These Stallions are first-class and their sires and dams are among the noted prize winners in Europe. For price and further particulars address AMERICAN BEET SUGAR CO., 123 California Street, San Francisco.

### PIGS FOR SALE.

Nine Four-Month Registered Berkshire Pigs. \$10 EACH, OR \$75 FOR THE NINE. E. S. GORDON, Box 13, SANTA ROSA, CAL.



Field and Hog Goods.  
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CURE YOUR COLD WITH R. Hall's Pulmonary Balsam.

# BLACK LEG VACCINE.

## POWDER VERSUS STRINGS.

We manufacture both Powder and String Vaccine, and extensive field experience has proven that our strings are the strongest on the market.

Where there are only a few head to be vaccinated, strings are convenient to use; but where a large number are to be vaccinated, we strongly recommend the powdered vaccine, used with our regular outfit, as being the most expeditious method, and the immunity conferred thereby is more permanent.

But, whether you use Powder or String Vaccine, **INSIST ON KNOWING THAT IT IS FRESH.** Vaccine DOES deteriorate with age and should be stamped on back with date after which it should not be used. This date should be within six months from date of manufacture. Refuse to accept any not stamped or that is stamped more than six months ahead of the date of your purchase.

**OUR VACCINES ARE FRESH.** Every package is stamped on back with date after which it should be returned for exchange for fresh vaccine.

Our friends are among those who have hitherto used foreign and other vaccines, and we can refer to stockmen who have successfully revaccinated and stopped losses with our vaccine after unsatisfactory trial of foreign and other vaccines.

### NOTE OUR PRICES. They Are Lower Than All Others.

SINGLE, per package, containing ten or more doses, according to age of animals.....	\$1 25
DOUBLE, per double package, containing ten to twenty doses, according to age of animals.....	1 75
STRINGS, per package of 10 doses, including needle.....	1 25
Per package of 15 doses, including needle.....	1 75
Per package of 25 doses, including needle.....	2 50
Per package of 50 doses, including needle.....	4 75
VACCINATING OUTFIT, complete, including syringe, for using single and double vaccine.....	4 00
BLACK LEG SYRINGE, with two needles and extra washers, all in metal case	3 00
TERMS.—Cash with orders or we will send by express, C. O. D. We prepay all charges. Special discount to users of 500 or more doses.	

Write us for booklet on **BLACK LEG** and **ANTHRAX**. They are readable and interesting even if you apprehend no trouble from these diseases.

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Our Specialties: Anthrax and Black Leg Vaccines; Hog Cholera Serum; Cutter's Scour Cure; Cutter's Lump Jaw Cure; Cutter's Antiseptic.

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Every Sire directly imported from Herds of the Greatest Eastern Breeders.  
Large Number of Officially Tested Cows. Bull Calves from Great Producing Dams.  
Correspondence and personal inspection invited. R. M. HOTALING, 431 Jackson St., San Francisco.



## STATE FAIR VISITORS

knew good pigs when they saw them and our sales were much larger than in any other year, which has reduced our stock to a small number.

We have a few pigs ready to ship and other litters coming on. We won a large number of premiums which show the character of the herd. We still claim to have the best large herd on the coast and are adding new animals when we find good ones. Persons wanting good pigs should get in their order early to get a choice of litters.

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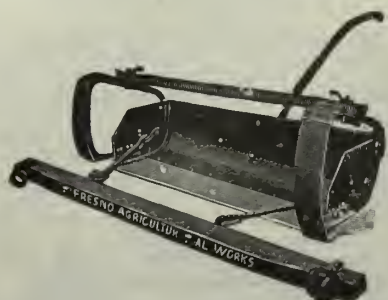
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## The Fresno Scraper.

3 1/2-4-5 Foot.



FRESNO AGRICULTURAL WORKS.  
FRESNO, CALIFORNIA.



## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, Jan. 29, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July
Wednesday.....	79 @79 1/2	79 @79 1/2
Thursday.....	78 1/2 @79 1/2	78 1/2 @79 1/2
Friday.....	78 1/2 @79 1/2	78 1/2 @79 1/2
Saturday.....	78 1/2 @79 1/2	78 1/2 @79 1/2
Monday.....	77 @78 1/2	78 1/2 @79 1/2
Tuesday.....	77 1/2 @78 1/2	77 1/2 @79 1/2

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May.	July
Wednesday.....	45 1/2 @46 1/2	39 1/2 @40 1/2
Thursday.....	44 1/2 @45 1/2	39 1/2 @40 1/2
Friday.....	44 1/2 @45 1/2	39 1/2 @40 1/2
Saturday.....	44 1/2 @45 1/2	39 1/2 @40 1/2
Monday.....	39 1/2 @41 1/2	35 1/2 @36 1/2
Tuesday.....	40 @42 1/2	36 1/2 @37 1/2

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 08 1/2 @1 08 1/2	1 09 1/2 @1 09 1/2
Friday.....	1 08 1/2 @1 08 1/2	1 09 1/2 @1 09 1/2
Saturday.....	1 08 1/2 @1 08 1/2	1 10 @1 10
Monday.....	1 08 1/2 @1 08 1/2	1 10 @1 10
Tuesday.....	1 08 1/2 @1 08 1/2	1 10 @1 10
Wednesday.....	1 09 1/2 @1 10	1 10 @1 10

## WHEAT.

The wheat market in this center has ruled rather quiet most of the week under review, holders in most cases contending for better prices than have been obtainable. Ships loading with wheat are not being cleared very rapidly or promptly, and while this is not proof conclusive that exporters are short of supplies, it warrants the inference, taking into consideration the recent free chartering of vessels in order to effect a corner for the time being in ocean carriers, that shippers are just now better supplied with vessels than they are with grain. There are at present about two dozen ships in the chartered fleet in port, loading or awaiting cargo, and to load these ships about 50,000 tons of wheat or its equivalent in other grain or merchandise will be required. Wheat will have to be depended on mainly for cargo, as there is little else available at this date. Some barley may be taken, but neither the quantity of this cereal offering nor the foreign demand for same warrants believing that very much wheat will be displaced by barley in the loading of the fleet now in harbor, or of the ships headed this way. Of the latter there are enough to carry about 250,000 tons wheat, while the ocean tonnage in sight a year ago was good for only 150,000 tons. No spot charters have yet been effected here this year under £1 8s 9d for iron ships, usual European voyage, but the freight market is weak and indications are that lower figures will soon be in force, which should correspondingly improve wheat values.

California Milling.....	1 10 @1 12 1/2
Cal. No. 1 shipping, alongside.....	1 07 1/2 @1 10
Oregon Valley.....	1 07 1/2 @1 10
Washington Blue Stem.....	1 07 1/2 @1 12 1/2
Washington Club.....	1 05 @1 07 1/2
Off qualities wheat.....	1 00 @1 05

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	68 3/4 @68 1/4	—s-d @—s-d
Freight rates.....	37 1/2 @38 1/2	28 1/2 @—s
Local market.....	98 1/2 @1 01 1/2	1 07 1/2 @1 10

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.08 1/2 @1.10.
December, 1902, delivery, \$1.09 @1.10.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at — @—; May, 1902, \$1.09 1/2 @1.10.

## FLOUR.

The outward movement of flour has not been so active as preceding week, nor was it to have been expected. The shipment by sea of over 110,000 barrels in six working days, or an average of more than 18,000 barrels per day, had never before been effected in the history of this port, and that it will be very often repeated or exceeded in the near future is not likely. Spot supplies are of fair volume, and more than enough to accommodate the existing local demand at full current rates. Quotable values remain as last noted.

Superfine, lower grades.....	\$2 40 @2 50
Superfine, good to choice.....	2 60 @2 90
Country grades, extras.....	3 15 @3 35
Choice and extra choice.....	3 35 @3 65

Fancy brands, jobbing.....	3 65 @3 75
Oregon, Bakers' extra.....	2 90 @3 25
Washington, Bakers' extra.....	2 90 @3 40

## BARLEY.

No radical changes have been effected in quotable values for barley since date of last review, but the market could not be termed favorable to the buying interest, especially for feed descriptions, which have been commanding relatively better prices than brewing or export barley, stocks of low grade the past season having been unusually light. Sales of feed barley were made up to 87 1/2c, which was as much as the majority of shippers would pay for export stock. In the speculative market there was a little more fluctuation than for some time past, with the general tendency of the Call Board market unfavorable to the buying or bear interest. Market closed firm, with offerings light.

Feed, No. 1 to choice.....	88 1/2 @ 88 3/4
Feed, fair to good.....	85 @ 87 1/2
Brewing, No. 1 to choice.....	87 1/2 @ 92 1/2
Chevalier, No. 1 to choice.....	95 @ 1 05
Chevalier, poor to fair.....	85 @ 90

## OATS.

The market is quiet, the comparatively stiff prices ruling lately having checked the demand. There are no heavy offerings, however, from either first or second hands. Most of the oats which have been lately landed here are being held by millers and dealers against future needs. Oats cannot be laid down here from Northern or Eastern points at less than current asking rates.

White Oats, fancy feed.....	1 37 1/2 @1 42 1/2
White, good to choice.....	1 32 1/2 @1 40
White, poor to fair.....	1 22 1/2 @1 30
Gray, common to choice.....	1 30 @1 40
Milling.....	1 35 @1 42 1/2
Surprise, good to choice.....	1 40 @1 45
Black Russian.....	1 12 1/2 @1 30
Red.....	1 22 1/2 @1 40

## CORN.

Prices for all varieties of this cereal are being maintained at much the same figures as last quoted, with market particularly firm for choice yellow, offerings of the same being materially lighter at present than of white corn. There is nothing to warrant anticipating for some months to come much easier figures than are now current.

Large White, good to choice.....	1 40 @1 45
Large Yellow.....	1 45 @1 50
Small Yellow.....	1 55 @1 60

## RYE.

Demand is not brisk, but in the absence of any special selling pressure, values are being fairly well maintained at last quoted advance.

Good to choice.....	85 @ 90
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## BUCKWHEAT.

Most of the local millers claim to be amply supplied for the time being, so there is little or no competition in bidding and market lacks firmness.

Good to choice.....	1 55 @1 70
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## BEANS.

Owing to some improvement in the outlook for coming crop in this State, and the Eastern market being rather quiet and lacking in firmness, there has been an easier feeling here. It would not be possible, however, to make free purchases at any marked reductions from recent asking figures. To find prompt custom on offerings from first hands, it might be necessary to shade prices to some extent in favor of buyers. Offerings are not particularly heavy, and it is the exception where disposition is shown to crowd stock to sale.

Pea, fair to good, 100 lbs.....	3 50 @4 00
Small White, good to choice.....	3 00 @3 25
Lady Washington.....	2 80 @3 10
Pinks.....	1 90 @2 15
Bayos, good to choice.....	2 40 @2 60
Reds.....	2 50 @3 00
Red Kidney.....	3 50 @3 75
Limas, good to choice.....	4 50 @4 60
Black-eye Beans.....	3 50 @3 65
Garbanzos, large.....	2 00 @2 25
Garbanzos, small.....	1 25 @1 50

## DRIED PEAS.

There is not much doing in dried peas of any variety. While not quotably lower, free sales could not be effected at current quotations. As for some time past, stocks of Green are heavier than of Niles, and in consequence values for latter are being best maintained.

Green Peas, California.....	1 50 @2 00
Niles Peas.....	1 75 @1 80

## WOOL.

The market is quiet, and must remain so until new clip begins to put in an appearance, which will be in about six weeks. There is very little grease wool now offering from first hands, and practically none which can be termed desirable. Values at this date are largely nominal, owing to the inactivity prevailing. The prospects for a firm market for coming clip continue good.

Southern, defective, 7 mos.....	7 @ 8
Oregon Valley, fine.....	14 @15

Oregon Valley, coarse to medium.....	12 @13
Eastern Oregon, choice.....	11 @13
Eastern Oregon, fair to good.....	9 @10
Nevada, as to condition.....	10 @12

## FALL.

Humboldt and Mendocino.....	11 @12
Northern Mountain, free.....	9 @10
Northern Mountain defective.....	8 @ 9
Middle Counties.....	8 @10
San Joaquin and Plains.....	6 1/2 @ 8 1/2
San Joaquin Lambs.....	7 1/2 @ 9

## HOPS.

Stocks in the hands of growers are light, but values are without quotable improvement. Some late transfers have been effected at 11c, this appearing to be the limit with wholesale operators, and only for choice will they pay this figure. Higher quotations are based on asking prices or on values realized in a jobbing way.

Good to choice, 1901 crop.....	10 @12
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## HAY AND STRAW.

As considerable hay has been lately shipped out of the State, mainly to points in Nevada, the market is presenting a healthy tone, current values being as a rule well maintained. It does not now look as though any noteworthy weakness would be developed in this market, unless it be late in the season. Most of the hay in the districts adjacent to San Francisco Bay is in second hands. Straw is commanding steady rates, with offerings rather light.

Wheat, good to choice.....	10 00 @14 50
Wheat and Oat.....	10 00 @13 00
Tame Oat.....	8 50 @11 50
Wild Oat.....	8 00 @10 50
Barley.....	8 00 @9 50
Alfalfa.....	9 00 @10 50
Clover.....	6 50 @9 00
Compressed.....	10 00 @14 50
Straw, 1/2 bale.....	42 1/2 @ 55

## MILLSTUFFS.

Prices for all kinds of mill offal remained quotably about the same as noted in last issue, with arrivals and offerings of quite moderate volume and the demand fair. Rolled Barley and Milled Corn were both steadily held, with supplies light.

Bran, 1/2 ton.....	18 00 @19 00
Middlings.....	21 00 @23 00
Shorts, Oregon.....	18 50 @19 50
Barley, Rolled.....	19 00 @19 50
Cornmeal.....	32 00 @33 00
Cracked Corn.....	31 50 @32 00

## SEEDS.

Mustard Seed is now in light stock, especially Yellow. Prices for both varieties remain quotably as last noted. Alfalfa is not receiving much attention, the season thus far not having been favorable for extensive seeding. In Bird Seed the movement is light at quotably unchanged values.

Alfalfa, Cal.....	7 25 @ 7 50
Alfalfa, Utah.....	8 25 @ 8 75
Flax.....	2 40 @ 2 60
Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 25 @ 3 00

Canary.....	3 1/2 @ 3 1/2
Rape.....	1 1/2 @ 2 1/2
Hemp.....	3 1/2 @ 3 1/2

## BAGS AND BAGGING.

The Grain Bag market is quiet and is not noteworthy for firmness, but dealers in most instances are asking unchanged figures. The prices quoted for Calcutta futures show but slight advance over the cost of laying down. If the grain crop should prove light, however, bags may sell for less than cost. Some movement in Wool Sacks is looked for at an early day, on account of Spring clip; supplies are of fair volume, with prices steady.

Calcutta Grain Bags, buyer June-July.....	6 @ 6 1/2
Calcutta Grain Bags, spot.....	6 1/2 @—
San Francisco Grain Bags, 2x36, spot.....	— @—
Wool Sacks, 4 lbs.....	35 @36
Wool Sacks, 3 1/2 lbs.....	32 @33
Fleece Twine.....	8 1/2 @—
Gunnies.....	— @—
Bean Bags.....	5 1/2 @ 5 1/2
Fruit Sacks, cotton, three sizes.....	5 1/2 @ 6, 6 1/2
Fruit Sacks, Jute.....	7 @ 7 1/2

## HIDES, PELTS AND TALLOW.

The tendency of the market for Hides and Pelts has been to easier figures, largely owing to most of the present offerings showing rather poor average condition. Tallow is in good request, with market firm at the quotations.

## HONEY.

The market is lightly stocked and desirable qualities are being as a rule rather firmly held, but demand is slow at full current rates. Unless prospects for coming crop soon show material improvement, there is not likely to be any weakening experienced in values.

Extracted, White Liquid.....	5 1/2 @ 6
Extracted, Light Amber.....	4 1/2 @ 5
Extracted, Amber.....	4 @—
White Comb, 1 lb frames.....	11 @12 1/2
Amber Comb.....	8 @10
Dark Comb.....	6 @ 7

## BEESWAX.

There is not much coming forward

from any quarter and spot stocks are of small proportions. Market is firm at unchanged quotations.

Good to choice, light, 1/2 lb.....	26 @28
Dark.....	24 @25

## LIVE STOCK AND MEATS.

Market for Beef has developed no special changes since last review, values ruling fairly steady, with offerings of fair volume. Mutton sold at much the same figures as last quoted, but the market could not be termed firm. Veal did not arrive freely and sold to fair advantage. Choice Lamb was not plentiful. Hogs were not in heavy receipt, but in sympathy with the market East, the tendency was to slightly lower values.

Beef, first quality, dressed, net 1/2 lb.....	7 @ 7 1/2
Beef, second quality.....	7 @—
Beef, third quality.....	6 @ 6 1/2
Mutton—ewes, 7 @7 1/2; wethers.....	7 1/2 @ 8
Hogs, hard grain fed, 150 to 250 lbs.....	5 1/2 @ 6
Hogs, small, fat.....	5 1/2 @ 6
Hogs, large, hard, over 250 lbs.....	5 1/2 @ 5 1/2
Hogs, soft or acorn fed.....	5 @—
Hogs, country dressed.....	6 1/2 @ 7
Veal, small, 1/2 lb.....	8 @ 9 1/2
Veal, large, 1/2 lb.....	8 @ 8 1/2
Lamb, spring, 1/2 lb.....	11 @—

## POULTRY.

For other than choice young stock the market has been unfavorable to sellers most of the current week. There were tolerably free arrivals of Eastern poultry, which operated against the advantageous sale of the ordinary run of offerings of the home product. Most of the poultry now coming forward from the interior is under choice. Turkeys were not in heavy receipt, but there were enough to keep the market rather favorable to buyers, the demand being light. Current values for Pigeons were well maintained, with market especially firm for choice young, latter being in light receipt.

Turkeys, dressed, choice.....	16 @ 18
Turkeys, alive, Hens, 1/2 lb.....	14 @ 15
Turkeys, alive, Gohliers, 1/2 lb.....	13 @ 14
Hens, California, 1/2 dozen.....	4 00 @5 00
Roosters, old.....	4 00 @4 50
Roosters, young (full-grown).....	4 50 @5 50
Fryers.....	4 00 @5 00
Broilers, large.....	4 00 @5 00
Broilers, small to medium.....	3 00 @4 00
Ducks, old, 1/2 dozen.....	5 00 @5 50
Ducks, young, 1/2 dozen.....	6 00 @7 00
Geese, pair.....	1 50 @1 75
Goslings, pair.....	2 00 @2 25
Pigeons, old, 1/2 dozen.....	1 50 @1 75
Pigeons, young.....	2 50 @2 75

## BUTTER.

Demand was fair for fresh, only a small proportion of the trade being at present on held or cold storage stock. Medium grades of fresh sold to relatively better advantage than select creamery, the latter being in better supply as compared with the demand than was choice butter for which no special premium was exacted on account of brand. Cold storage supplies are now of rather slim volume, which accounts for the increased local demand for fresh product.

Creamery, extras, 1/2 lb.....	25 @—
Creamery, firsts.....	23 @24
Creamery, seconds.....	20 @21
Dairy, select.....	22 @23
Dairy, firsts.....	19 @20
Dairy, seconds.....	16 @—
Mixed store.....	13 @14
Creamery in tubs.....	19 @21
Pickled Roll, 1/2 lb.....	— @—
Firkin, California, choice to select.....	— @—
Firkin, common to fair.....	— @—

## CHEESE.

There is not much strictly choice new cheese, and in a limited way such stock is selling above quotable rates. Old cheese and common qualities of new are being offered rather freely, with market for same inclining in favor of buyers. Young Americas are quite plentiful and ordinary qualities are offering at relatively lower figures than flats.

California, fancy flat, new.....	11 1/2 @12
California, good to choice.....	10 1/2 @11 1/2
California, fair to good.....	10 @10 1/2
California, "Young Americas".....	11 @12

## EGGS.

Declines in values have not been so pronounced as for several weeks preceding, and it is believed that prices have now about touched bottom for the time being. At or near existing rates there is apt to be sufficient shipping demand during the next thirty or sixty days to absorb the surplus. As soon as packing has to be resorted to, prices will go lower. Some Eastern cold storage eggs were lately shipped back to points where they had been packed, for lack of a market here. There are still some odds and ends of last season's pack hanging on the market.

California, select, large, white and fresh.....	20 @—
California, select, irregular color & size.....	19 @—
California, good to choice store.....	18 @19
California, common to fair store.....	— @—
Eastern, good to choice.....	— @—
Cold Storage.....	— @—

## VEGETABLES.

Market was very lightly stocked with fresh vegetables of most kinds, Peas be-



ing about the only noteworthy exception, and of this variety there were not many offering which could be termed strictly choice. Prices for choice to select qualities were naturally at a high range. The Onion market is firmer for choice to select stock, there being no heavy offerings of desirable qualities. Some of the Onions coming from Oregon are showing the effects of frost.

Beans, String, # lb.	10 @ 15
Beans, Wax, # lb.	12 1/4 @ 15
Cabbage, choice garden, # 100 lbs.	50 @
Cauliflower, # dozen	40 @ 50
Cucumbers, Bay, # large box	— @ —
Egg Plant, Los Angeles, # lb.	20 @ 25
Garlic, # lb.	1 1/4 @ 2 1/4
Mushrooms, # lb.	— @ —
Onions, Yellow Danver, # cental.	1 75 @ 2 25
Peas, Sweet garden, # lb.	5 @ 8
Peppers, Green, Los Angeles, # lb.	20 @ 25
Peppers, Bell, # box.	— @ —
Rhubarb, # lb.	— @ —
Squash, Marrowfat, # ton	7 00 @ 10 00
Summer Squash, # box.	1 50 @ 1 75
Tomatoes, Los Angeles, # box	1 50 @ 2 25

#### POTATOES.

Despite rather limited movement on local account, and scarcely any movement outward, the potato market is ruling more unfavorable to buyers than at any previous date this season. Present supplies are mostly in second hands, having been bought at comparatively high prices, while cost of carrying and shrinkage is making them daily more expensive to holders, so that only by having prices move upward can owners come out ahead or avoid loss. Sweet potatoes in reduced receipt and higher.

Burbanks, Salinas, # 100 lbs.	1 40 @ 1 75
River Burbanks in sacks, # cental.	1 15 @ 1 35
Petaluma and Tomales Burbanks.	1 25 @ 1 50
Oregon Burbanks.	1 30 @ 1 70
River Reds.	1 30 @ 1 50
Sweets, Merced, # cental.	1 40 @ 1 50

#### The Fruit Market.

##### FRESH FRUITS.

There are no heavy quantities of Apples on market and no other fresh deciduous fruit of any sort quotable at present. Apples of high grade, such as fancy Spitzenberg, Greenings or Pippins, were in fair request at tolerably stiff figures, quotable rates remaining without change. Ordinary qualities were not eagerly sought after, and although not in heavy stock, had to go at comparatively easy rates in most instances to secure prompt custom. Apples, fancy, # 4-tier box. 1 75 @ 2 00 Apples, good to choice, # 50-lb. box. 1 00 @ 1 50 Apples, common to fair, # 50-lb. box. 50 @ 75

##### DRIED FRUITS.

The market for cured and evaporated fruits has not exhibited very much activity the current week, but has presented in the main fully as healthy condition as previously noted. Peaches and Pears received the most attention, and market for both is strong at the quotations. Stocks of Pears are now of light proportions, especially of desirable qualities, having been greatly reduced through recent purchases for New York and Europe. Jobbers who have any choice Pears now in store are disposed to ask higher figures rather than let go at current rates. The tolerably free buying of Peaches during the past week or two has resulted in concentrating the bulk of stocks in few and strong hands. While not quotably higher, all desirable qualities of Peaches are being very firmly held, with every probability that any changes in values during the balance of the season will be to stiffer rather than to easier prices. Apples are ruling steady, with not much inquiry at the moment, but stocks too slim to admit of any extensive operations. Apricots now on hand are mostly choice or else very ordinary, medium or fair to good qualities being practically closed out. The Prune market is fairly firm at quotably unchanged values, with not many of last year's crop now offering and no disposition to crowd stocks to sale. There is a considerable quantity of old Prunes still to be placed in consuming channels, but they are being steadily held on the 3@3 1/2c basis for the 4 sizes, or 1c under current rates for new.

##### EVAPORATED OR BLEACHED.

Apricots, Royal, prime.	— @ —
Apricots, Royal, choice, in sacks, # lb.	9 @ 9 1/4
Apricots, Moorpark.	10 @ 12
Apples, in 50-lb boxes, rings, pressed, fancy.	8 @ 8 1/4
Apples, 50-lb boxes, rings, pressed, good to choice.	6 1/4 @ 7 1/4
Nectarines, # lb.	5 @ 6
Peaches, unpeeled, fancy.	8 @ 9
Peaches, unpeeled, choice.	6 1/4 @ 7 1/4
Peaches, peeled, in boxes.	12 @ 14
Pears, halves, choice to fancy.	6 1/4 @ 8 1/4
Plums, Red and Black, pitted.	5 1/4 @ 6 1/4
Plums, White and Yellow.	5 1/4 @ 6 1/4
Prunes, 4 sizes, in bags, 3 1/4 @ 3 1/2c; 50-60s, 4 1/4 @ 4 1/2c; 60-70s, 4 @ 4 1/4c; 70-80s, 3 1/4 @ 3 1/2c; 80-90s, 3 1/4 @ 3 1/2c; 90-100s, 3c @ —; these figures for 1901 crop.	

##### COMMON SUN-DRIED.

Apricots.	— @ —
Apples, sliced.	3 @ 5
Apples, quartered.	3 1/4 @ 4 1/4
Peaches, unpeeled.	5 @ 6 1/4

Pears, prime halves.	5 @ 5 1/4
Plums, unpitted, # lb.	1 1/4 @ 2 1/4

#### RAISINS.

Aside from some 400 cars tied up in litigation between the Association and the packers, there are few raisins left. Market is decidedly firm, but it is not quotable in a wholesale way, owing to very limited offerings. Jobbers are asking on loose Muscatels an advance of 1c per lb. on rates lately current, and for Seeded Raisins prices in some instances have been marked up fully 1c per lb. A few bleached Sultanias are offering in carload lots within range of 7@8 1/2c for prime to fancy.

#### CITRUS FRUITS.

Orange market has not shown much activity the current week, frosty weather in connection with a good many frosted oranges having an unfavorable effect. Sound oranges were in fair request, with market for same moderately firm at the quotations. High grade Navels were in lightest stock and tended most in favor of the selling interest. Lemons were in more than ample supply for the demand, the inquiry being rather light, and only for best qualities did the market display any firmness. Limes were marked up, with stocks small and in few hands.

Oranges—Navels, # box.	1 25 @ 2 50
Seedlings, # box.	50 @ 1 00
Lemons—California, select, # box.	2 25 @ 2 50
California, good to choice.	1 50 @ 2 00
California, common to fair.	75 @ 1 25
Grape Fruit, # box.	1 25 @ 2 50
Limes—Mexican, # box.	6 00 @ 6 50

#### NUTS.

Stocks of Almonds and inquiry for same are both of light proportions, prices remaining quotably unchanged. Walnuts are still obtainable in a limited way in carload quantities, but there is no disposition to sell at less than full current rates. Peanut market is showing steadiness, but trade is not active.

California Almonds, shelled.	15 @ 18
California Almonds, paper shell, # lb.	10 @ 12
California Almonds, soft shell.	8 @ 9
California Almonds, hard shell.	5 @ 6
Cal. White Walnuts, No. 1 soft shell.	9 @ 9 1/4
Cal. White Walnuts, No. 2 soft shell.	7 @ 8
Cal. White Walnuts, No. 1 hard shell.	7 1/4 @ 8 1/4
Cal. White Walnuts, No. 2 hard shell.	6 @ 7
Peanuts, California, fair to prime.	4 1/4 @ 5 1/4
Peanuts, Eastern, hand-picked.	5 1/4 @ 6
Pine Nuts.	5 @ 6

#### WINE.

Not much life is shown in the wine market, dealers not taking kindly to the generally stiff prices being asked, and by holding back hope to be able to buy a little later on at easier figures than they are now able to make purchases at. Dry wines of 1901 vintage are quotable nominally at 22@26c. per gallon wholesale, with some growers asking more, but higher figures than above noted are not warranted as wholesale quotations, and if selling pressure were exerted, the shading of quotations in favor of buyers might be necessary.

#### Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

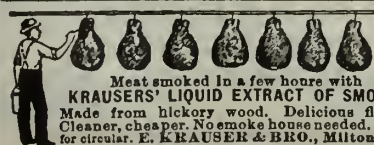
FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.	217,004	4,091,137
Wheat, centals.	226,344	5,820,771
Barley, centals.	26,247	4,649,902
Oats, centals.	9,523	695,386
Corn, centals.	2,585	63,339
Rye, centals.	3,380	117,195
Beans, sacks.	10,199	556,984
Potatoes, sacks.	25,498	936,132
Onions, sacks.	1,293	152,420
Hay, tons.	3,190	93,316
Wool, hales.	41	42,724
Hops, hales.	151	7,114

#### EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.	443,608	3,034,322
Wheat, centals.	199,458	5,339,113
Barley, centals.	84	3,527,036
Oats, centals.	30	2,150
Corn, centals.	10	8,711
Beans, sacks.	331	19,479
Hay, hales.	3,923	10,322
Wool, pounds.	22,610	545,331
Hops, pounds.	—	466,023
Honey, cases.	6	5,509
Potatoes, pack's.	2,787	37,051

#### California Dried Fruit at New York.

NEW YORK, Jan. 29.—Evaporated apples, common, 7@8 1/2c; prime wire tray, 9 1/4@9 1/2c; choice, 9 1/2@10c; fancy, 10 1/4@11c. California Dried Fruits.—Market is not showing much activity, but values are ruling steady. Prunes, 3 1/4@7c. Apricots, Royal, 9 1/4@13c; Moorpark, 10@14c. Peaches, unpeeled, 7 1/4@10c; peeled, 14@18c.



Meat smoked in a few hours with KRAUSER'S LIQUID EXTRACT OF SMOKE. Made from hickory wood. Delicious flavor. Cleaner, cheaper. No smoke house needed. Send for circular. E. KRAUSER & BRO., Milton, Pa.

#### New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR WEEK ENDING JANUARY 14, 1902.

691,239.—TELEPHONE—Andriano & Herbstritt, S. F.
691,244.—POURING METAL INTO MOLDS.—J. V. Coleman, S. F.
691,127.—PENCIL SHARPENER—A. T. Fox, Tacoma, Wash.
691,341.—LIFE PRESERVER—C. Gore, S. F.
691,146.—LEVEL AND PLUMB—J. V. Janin, Seattle, Wash.
691,370.—WATER BANDAGE—C. H. Jones, Tempe, Ariz.
691,061.—JACK SCREW—G. L. & S. W. M. Kollock, Seattle, Wash.
691,377.—POSTAGE STAMP CARRIER—J. H. Lasserrot, Berkeley, Cal.
691,155.—CURTAIN HOLDER—E. Marsky, San Jose, Cal.
691,163.—PULVERIZER—W. F. McClellan, Seattle, Wash.
691,175.—CAR AXLE BOX—J. L. Petithomme, Oakland, Cal.
691,077.—BUTT HINGE—F. W. L. Schafer, Los Banos, Cal.
691,013.—MENUGRAPH—W. H. Smyth, Berkeley, Cal.
691,015.—HARNESS SADDLE—E. A. Spaulding, Phoenix, Ariz.

#### Fruit and Ornamental Shade Trees.

#### ORANGES, OLIVES, PALMS, ROSES, ETC. SEEDS.

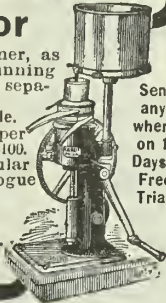
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#### In Subdivisions.

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This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

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Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

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## THE FIELD.

## Poisoning Coyotes.

TO THE EDITOR:—Seeing repeated complaints about coyotes I herewith give a remedy which you will kindly publish for the benefit of your readers who are thus troubled.

If you can get a carcass of an old horse, cow, hog, or in fact any animal that is worth less than a few coyotes, hitch a team to the same and drag over the ground, for, say a mile or two, over country infested by the coyotes. This in order to make a trail. Then take a sharp-pointed knife, cut slits 3 inches in length through hide and into flesh, insert a dose of crystallized strychnine the size of a large pea, and press the slit together so that poison is well covered, or imbedded rather, in the tissues of the flesh. You can in this way charge the carcass wherever flesh for a good mouthful can be found. Last, but not least, do not touch your bait with your hands, as the coyote will not take it if you handle it. Use a knife blade or sharpened piece of wood. Also be very careful not to sprinkle any poison on the surface of the flesh, as this seems to taint and they will refuse to touch it.

I might add that I have just had a whack at them. A few weeks ago a neighbor killed an old, good for nothing horse, and I fixed him up. We picked up eight coyotes one morning and five another, all the skins of which are at the tannery now. I found two more which had got away quite a distance and laid for several days, so the skins were not good. Since then I have not heard or seen any more of them. I will guarantee it to work if done properly.

FRED BAISCH.

Palisade, Colo.

## What a Horticultural Commissioner Observes.

Mr. P. D. Fowler, chairman of the Tulare County Board of Horticulture, writes as follows:

I like the PACIFIC RURAL PRESS very much, and only regret that every fruit grower in this county does not take it. I find that those who do take it and read it are much more willing to take care of their orchards than those who do not.

THE Columbus Carriage & Harness Co. have adopted the plan of dealing direct with carriage buyers and eliminating the middleman altogether. They sell to the customer at the same rate they formerly sold to dealers, thereby saving him the intermediate profits, and in addition gives him a wider range of selection. Anyone interested in the carriage question will find it to his advantage to write for a catalogue and study its prices. The money that can be saved in this way is considerable, and should not be overlooked when a purchase of this kind is contemplated. Address The Columbus Carriage Co., Columbus, O.

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1. \$2200 buys 65 acres choice sandy land, on railroad, 6 miles from Merced Cal. Depot on land. Don't wait for your hat if you want a bargain.
2. \$1600 buys nicely improved 10 acre ranch with plenty of fruit and free water, only 4 miles from Merced.
3. 9-acre ranch, nicely improved, very rich land, only 1 mile from town. Price low for quick sale. Address E. M. MILLS, Merced, Cal.

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Also, 15 Acres Adjoining Ukiah. Address A. O. CARPENTER, UKIAH, CAL.

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First Grade, 18 in. long, \$10 per 1000.  
Second Grade, 14 in. long, \$ 5 per 1000.

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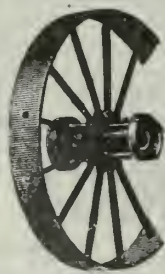
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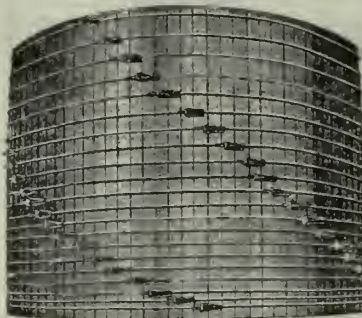
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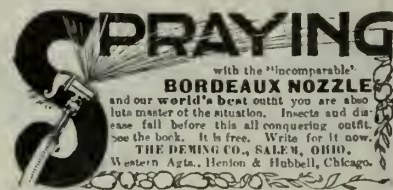
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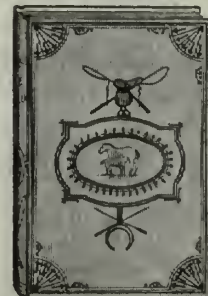


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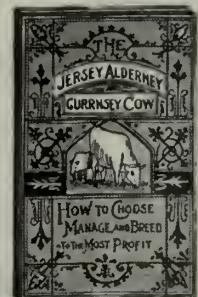
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## Patrons of Husbandry.

### Tulare Grange.

Tulare Grange met at its hall on Saturday, January 18th. The third and fourth degrees were impressively conferred upon a class of four and a very enjoyable harvest feast was had.

The subject of the day, "The Science of Home Making," was taken up. A very general consideration was given to it. The discussion of it was thoughtful, interesting and instructive.

The Interstate Commerce bill now before Congress was brought up on a communication to the Secretary and referred to a committee of three to report at next meeting.

The Secretary read a communication accompanied by H. R. bill No. 4, now before Congress and known as the Tawney-Grout bill. On motion, a committee of three was appointed to examine and report on the bill to the Grange.

The bill provides for taxing at the rate of 10 cents a pound articles colored and made to resemble butter and cheese, but made of other products than milk and cream; but if such articles not made from cream and milk are not colored to resemble butter, but are put on the market and sold simply as the compound preparations they are, then no tax shall be collected on them.

The committee reported the following resolution which were unanimously carried and the Secretary was directed to send copies to our Senators and Representatives in Congress:

Resolved, This Grange of Patrons of Husbandry hereby endorses H. R. bill No. 4, known as the Tawney-Grout bill, and requests our Senators and Representatives in Congress to vote for and support the same.

Brother R. B. Holcom read a paper on "Books and Pictures," Sister Lillian Burleigh read a paper on "Social Amenities," and Sister Mull addressed the Grange on "Financial Adjustments." Sister Mull took the position that every wife aided in the production of the home income and should, without solicitation of her husband, have a part of the income for her own expenditure.

The same committee that prepared the past semi-annual programme were requested to prepare another one for the next six months.

The Steward and assistants were directed to see that the regalia necessary for properly conferring the degrees was on hand and used when the degrees are conferred.

The Secretary read the following questions from the question box:

1. Who will tell us about bees? 2. What is the horse power of a 12-foot windmill? 3. What is the best method of propagating apple trees in the nursery? 4. How can we interest our young people in Grange work? 5. What should be the standard for membership in our Order? 6. Has the farmer been benefited by Signal Service forecasts?

All the questions were given an interesting discursive consideration. It was unanimously admitted that the Signal Service forecasts have been of much benefit to farmers, and our newly obligated Sister, Ellsworth, gave an instructive address on how the Grange work can be made to interest the young people and the young people made to help the Grange.

Ten copies of the Year Book of the Department of Agriculture for 1900, sent to the Grange by Senator Perkins, having been all distributed, the Lecturer announced that he will at the next meeting call on the recipients to tell the Grange what he or she found most interesting and useful in it.

Subject for consideration at next

meeting: "What is the farmer's interest in politics and what, politically, is the farmer's duty?" J. T.

### Grange Elections.

Sonoma Pomona Grange: Master, Henry Johnson, Petaluma; Overseer, J. D. Skinner, Healdsburg; Lecturer, P. G. King, Two Rock; Treasurer, G. N. Whittaker, Bennett Valley; Steward, C. D. Grover, Petaluma; Assistant Steward, W. G. Griffith, Geyersville; Lady Assistant Steward, Mrs. W. D. Houx, Two Rock; Secretary, Miss Fanny Gamble, Santa Rosa; Organist, Mrs. J. D. Skinner, Healdsburg; Chaplain, Mrs. C. D. Grover, Petaluma; Pomona, Mrs. James Moran, Sebastopol; Ceres, Mrs. Ada King, Two Rock; Flora, Mrs. Williams, Petaluma.



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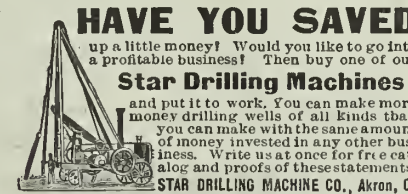
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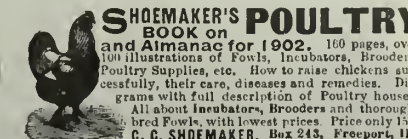


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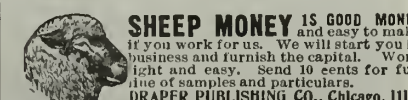


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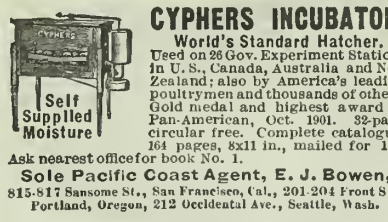
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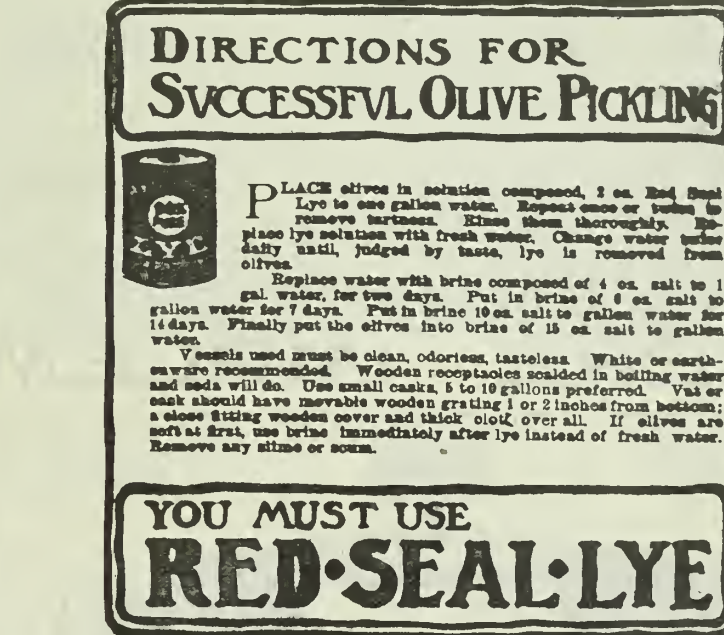
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Replace water with brine composed of 4 ea. salt to 1 gal. water, for two days. Put in brine of 4 ea. salt to 1 gallon water for 7 days. Put in brine 10 ea. salt to gallon water for 14 days. Finally put the olives into brine of 15 ea. salt to gallon water.

Vessels used must be clean, odorless, tasteless. White or earthenware recommended. Wooden receptacles scalded in boiling water and soda will do. Use small casks, 5 to 10 gallons preferred. Vat or cask should have movable wooden grating 1 or 2 inches from bottom; a close fitting wooden cover and thick cloth over all. If olives are soft at first, use brine immediately after lye instead of fresh water. Remove any slime or scum.

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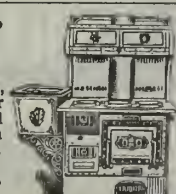
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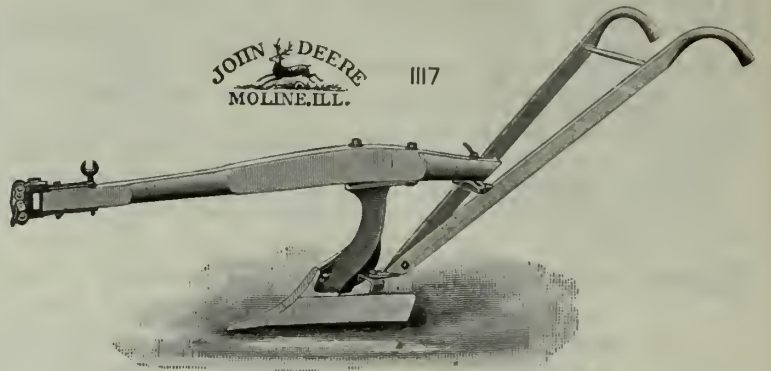
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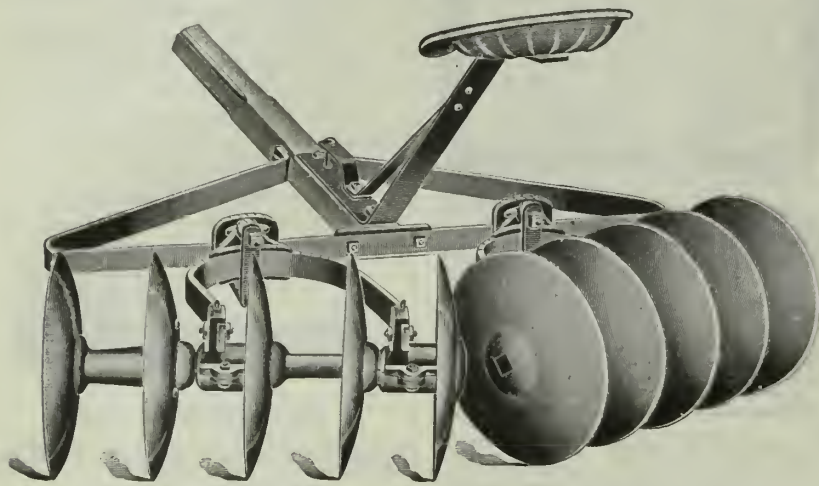
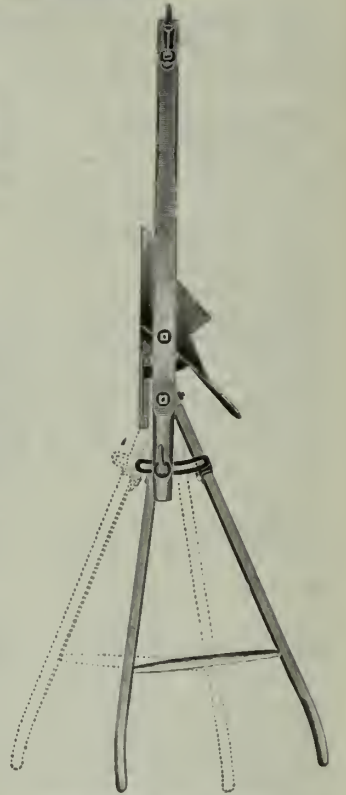
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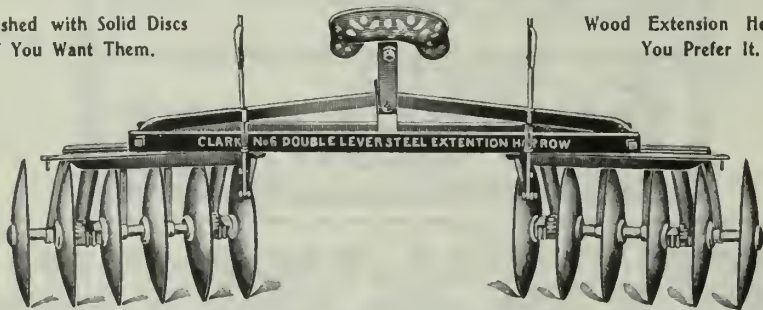
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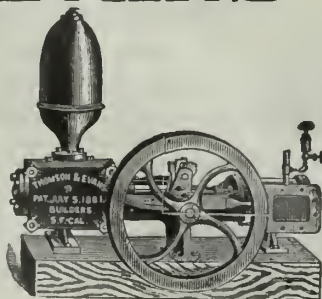
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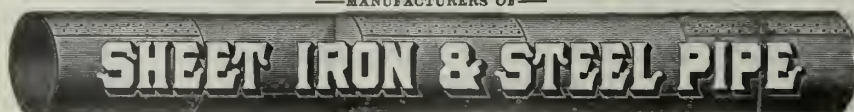
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# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 6.

SAN FRANCISCO, SATURDAY, FEBRUARY 8, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

### Irrigation Topics.

Irrigation pictures are pleasant to look upon, because they stand as exponents of the most progressive ideas and the most important problems involved in American agriculture at the opening of the new century. The last century began with land clearing as the foundation of agricultural progress and the century did its work well; in fact, from some points of view, too well. The present century has already started strongly on its course of reforestation of lands which have run their agricultural course and of lands which should never have been wholly cleared, and the enrichment of desert areas with that most important of all plant sustenance—water. Irrigation is now conceded to be a wide question in the United States, though but two years ago it was looked upon by most people as narrow and sectional. It is, indeed, wonderful what progress people east of the Rocky mountains have made within a few months in the comprehension of the wide importance and applicability of the irrigation idea and its relation to the development of the whole country.

We alluded appreciatingly recently to the testimony of Prof. Ellwood Mead before the Industrial Commission, in which he gave a comprehensive and yet very drawn sketch of irrigation development as it now appeals to the people of the United States. This testimony, as published in pamphlet form by the Department of Agriculture, is illustrated with striking scenes, showing phases of the irrigation effort, and we have secured permission to reproduce some of them, that they may reach beyond the limited distribution of the government document. The large view on this page illustrates well how the irrigation engineer invades the Western wilds and uses every advantage which the process of world building has made available for his purposes. Here a riotous creek has been arrested in its rocky bed, made to recoil upon itself and remain within bounds, in order that its water may be led quietly along a new course



Dam and Reservoir on Parley's Creek, Utah.

to fertile lands, instead of flowing idly into some sink, whence it would but answer the thirst of the sun and air. The neat and shapely work of the engineer destroys the picturesqueness of the view, but the industrialist will look long and gladly upon this way of adorning nature, while the offended artist will probably have only to cross the ridge to drink deeply of rocks and rapture. The scene in this case is in Utah, and it is to the Mormon immigrants that Prof. Mead gives large credit for initiative in irrigation matters. Though there was irrigation in the Southwest even among the aboriginal races and among the Spaniards who displaced them, the beginnings by English-speaking people were in Utah, and not until twenty years later did irrigation become an important factor in the growth of California and Colorado.

Other views on this page are taken in one of the newest irrigated States, Idaho. They represent simpler affairs than that in Utah, but are still important and interesting. Much of the ditch conveyance in Idaho is along the slopes above the river bed, and this style of canal building is well shown in one picture, while the other shows the simple construction of headgate which is used for such a canal. Idaho is demonstrating many things of wide irrigation interest along horticultural lines. Not the least of these is the success of the Idaho apples at the Paris

Exposition—apples grown by irrigation, when not long ago good, long-keeping apples could only be grown by rainfall, as though the apple tree knew or cared whether the water came from a cloud or from a ditch. Such demonstrations as that by the Idaho fruit are of incalculable importance to fruit growing throughout the whole country.

It looks now as though irrigation legislation at Washington might be advanced considerably this winter, although it is not likely that laws of general import can be passed. There has been much discussion and quite variance in the views of western lawmakers; but, according to the Orange Judd Farmer, an agreement has been reached on the terms of an arid land bill, and the measure will be pressed in Congress, with Mr. Newlands of Nevada its sponsor in the House and Mr. Hansborough of North Dakota in the Senate.

The bill provides that all moneys received from the sale and disposal of public lands in the Western States, excepting the 5% of the proceeds of the sales of public lands set aside for educational purposes, shall be used as a special arid land reclamation fund. The Secretary of the Interior is directed to make the necessary examinations and surveys, and to locate and construct irrigation works, reporting to Congress at the beginning of each session the result of examinations and surveys, with the estimates of cost of contemplated works. No right to use the water for land in private ownership shall be sold for a tract exceeding 160 acres to any one person. The distribution of the waters rendered available by the works shall be governed by State and Territorial laws.

The bill empowers the Secretary of the Interior to withdraw from public entry the lands required for any irrigation works and to restore them when, in his judgment, they are not required for irrigation purposes; to let contracts for the work and to limit the area per entry to that reasonably required for the support of a family and to fix the charges as well as the charges on lands in private ownership benefited by government irrigation plants.



Sidehill Construction of an Idaho Canal.



The Headgates of an Idaho Canal.



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DEWEY PUBLISHING CO. Publishers

E. J. WICKSON. Horticultural Editor

San Francisco, February 8, 1902.

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## The Week.

Rains continue here and there in moderate amounts and low temperatures have also largely ruled. It looks as though vegetation might be grounding itself well for a rush when the heat comes. Winter work has had a good chance this year and things as a rule are well up to date.

There has been quite a degree of firmness and many advances in the minor articles of produce and some main staples are also selling well. Wheat has maintained a steady course for spot transactions though futures have softened a little because of the rains; Eastern wheat is also sagging slightly. Four cargoes of wheat, one of flour and two of barley have cleared; in all a value of about \$400,000 has gone out with the tide. Barley is stiffer, particularly for feed barley, which has difficulty in separating its prices from those given for brewing—even higher for feed in some cases than shippers are offering for export barley. Oats and corn are strong and unchanged. Beats are quiet and steady with no pressure to sell. Bran is firm and stocks are light—in fact, light receipts and a little heavier demand have given a strong feeling to all millfeeds. Hay is the same as last week, but there is said by some to be an easier feeling; but authorities conflict somewhat as to the undertone. Straw is, however, stiffly held, and little is arriving. Beef and mutton are firm, but not higher, though the tendency seems upward; hogs are stiffer, although prices are now above what is called a packing basis; there seems to be a strong demand for small and medium hogs for fresh pork. This is Chinese New Year week, which may avail something both for what goes under bristles and feathers. Butter is higher and there is a good demand, as packed butter is giving out. Cheese is the same as before, fine new being scarce and old too plentiful. Eggs have improved, as shipping outward has rather unexpectedly cleared the market. Poultry is selling better than for some weeks. Potatoes are still held well with a slow movement; the consumption is lessened by the high prices, but shipments are few. Onions are higher; some Australians are now arriving and are held at 3½c—about a cent above the market, but receivers expect to reach it. Peppers and tomatoes have come all the way from Florida and have sold at \$5 per six-basket crate—about thirty pounds net. Tomatoes from Mexico are also sold at about 20 cents per pound. This is a shame upon the California thermal belts, which have apparently cooled off too much this year. We may be able to use a little glass profitably in the future. Apples have the same range and condition. Oranges have sold better, owing to light receipts and improved demand. Lemons are unchanged, though limes are lower. The dried fruit market is strong and active

in a small way. A good many assorted carloads are going out. Prunes are, however, quiet, especially old prunes. Raisins are marked up and few are still to be disposed of. Nuts are firm, with light stocks and prices well maintained. Hops are being shipped out. Strong efforts are being made to lift selling prices. Wool is as before.

Frost fighting is now becoming a timely topic in all the deciduous fruit lines, and there will be more of it done in the central part of the State this year than ever before. We have an interesting account on another page of success in the lemom district which will be suggestive for early blooming deciduous fruits and for vineyards. In that case the coal baskets were used. In another experiment during last week at the Minnewawa vineyard near Fresno, fire pots burning crude oil were used to see just what drop of temperature could be saved. The experiment was made by the Fresno Weather Observer, Mr. Bolton. He used an electric frost alarm to notify the company when the temperature reached 33°, and then the firing began. The writer for the Democrat says that the area was one acre, measured. It was covered with vines and the grass was already showing signs of hoar frost. Over this acre thirty-five iron pots, filled with crude petroleum, were soon blazing away, filling the air with a dense smoke that rose to a height of about 20 feet from the ground and remained suspended over it like a blanket. The night was an ideal one for the test, the air being still. The flames and smoke of the burning petroleum waved to and fro, owing to the inrush of cold air to supply the place of the heated stratum, but the pots continued to burn steadily through the five hours of the test. When the experiment was closed a thermometer outside the protected area indicated 24°, or 8° of frost. But within the protected area, where the fires were burning, there was little or no sign of frost, while the ground outside was silver white. The thermometer within the area stood at 30°, that indicated when the experiment commenced. Had there been sensitive fruit stock within the area it would have been protected and have suffered little or no injury. N. W. Moodey, who has been using the smudge pots in an orange orchard in the foothills near Reedley for a month, says that the protection afforded is complete. It really begins to seem as though a reasonable effort might save orchard fruits and vines from too frequent frost destruction. Fruit protection is likely to be a regular piece of horticultural work, just as cultivation, pruning and irrigation are.

We are glad the local horse show is taking hold again. We ought to have street shows of horses in all towns where the surrounding district will warrant it. Alameda county is doing herself credit in this line and should be emulated by other counties. There was recently a movement to restore the shows in the Pleasanton and Livermore regions, and now Haywards has taken up the matter and announces a horse show on March 8th. An organization duly officered and fitted out with committees is now at work upon the arrangements. All horsemen are requested to enter their horses for exhibition not later than March 1st so as to have time to prepare a list of all taking part, with pedigrees. There will be blank forms for owners of horses entering their stock that can be filled out and returned to the secretary—Mr. G. A. Oakes of Haywards, to whom all readers of PACIFIC RURAL PRESS may apply for any specific information they may desire. It is true as stated at a recent meeting that a fine horse display would attract horsemen from all over the State. Not only Alameda and Contra Costa counties would be represented, but all parts of the bay district, and it is expected that some of the most famous sires in the State and their colts will be there. This exhibition will be of great benefit to horse breeders, for there will be shown all classes of horses—draught horses, thoroughbreds, carriage and driving horses—and knowledge of them will naturally stimulate the farmers to raise the very best stock. We are glad Alameda county is going to do something for the real horse, and not be content with maintaining a gambling outfit for sports who do not know a saw horse from a clothes horse.

Leading prune people in the San Jose region are working for the organization of an association to re-

place the large combine which is expected to disintegrate at the next meeting. The press dispatches say that a petition asking that such a corporation be formed has already received the signatures of many fruit growers, and plans for its immediate formation are said to be maturing. It is held that while it is not possible to form an organization that can control the prune product of the State, the association of many growers handling their fruit in the same manner as the Association has, and profiting by its information, will be beneficial. The large warehouse at Santa Clara could be utilized by such a corporation.

It is a good thing to revive a Farmers' Club, as was done at San Jose on Saturday last, and it will be a good thing also to keep it revived. Nothing answers quite so well as these free and informal assemblies, which are able to get right at work at the discussion of some important matter from the first fall of the chairman's hammer. If the San Jose Farmer's Club never does anything better than shed the light of wide experience upon the best way to go at the root borer, it ought to live a hundred years. The early reports which we have of the meeting say that it was reported by L. F. Graham and other prominent growers that, after experiments with thousands of trees, they were satisfied that carbon bisulphide was a positive remedy for the peach root borer. A trench is dug about the tree and from one to two ounces of carbon bisulphide placed around the trunk of the tree and covered with dirt, the fumes penetrating the boring in the tree and killing the insects. In the last ten years all kinds of experiments have been made to get rid of this pest. The carbon bisulphide treatment has been impeached as too dangerous. The decision at the Farmers' Club last Saturday seems to deny this and to show that, when not applied to the roots, but to the earth and covered in, the fumes do the work. If there is any exception to be taken to this claim, it should be done speedily.

## The California Polytechnic School.

The law which was approved by Governor Gage on March 8, 1901, establishes the "California Polytechnic School" in the county of San Luis Obispo and at or near the city of San Luis Obispo. The purpose of this school is "to furnish to young people of both sexes mental and manual training in the arts and sciences, including agriculture, mechanics, engineering, business methods, domestic economy and such other branches as will fit the students for the non-professional walks of life." It is provided that the act "shall be liberally construed to the end that the school established may at all times contribute to the industrial welfare of the State of California."

The governing board of the institution is to consist of the Governor, the State Superintendent of Public Instruction and five trustees appointed by the former. The regular term of a trustee is four years, but the law provides that the first appointments shall be for terms of varying lengths, so that vacancies shall occur at different times. Governor Gage has now complied with this provision of the Act, which by its terms went into effect on January 1, 1902, by announcing the following appointment of trustees for the terms specified: For one year, S. C. Smith of Bakersfield and William Graves of San Luis Obispo; for two years, W. M. John of San Luis Obispo; for three years, F. A. Hihn of Santa Cruz; for four years, E. J. Wickson of Berkeley.

These trustees are given power to select a site for the permanent location of the school and are instructed by the law to examine the different sites offered by the people of San Luis Obispo county for the location of the school. They are authorized to purchase such a site, and an appropriation of \$50,000 is made for the purchase of a site, the construction and furnishing of the proper buildings and the maintenance of the school.

Thus the foundation seems to be laid for a California school of rural arts and handicraft, and those who have longed for further development of the practical in our educational system will no doubt take much interest in the undertaking. The founding of such an institution which shall meet the requirements of educational sanity and wide usefulness is not an easy task, but we doubt not the trustees will address themselves diligently to the work, which we sincerely hope they may successfully accomplish.



## QUERIES AND REPLIES.

### Treatment of Rabbit Trees.

TO THE EDITOR:—In the third edition of your book, "California Fruits," page 461, you recommend using commercial aloes—one pound to four gallons of water—for sprinkling and painting the bark of trees to prevent rabbits from eating them. I have a lot of apple trees set out a year ago, and the rabbits got through the fence recently and ate off nearly all the growth made since setting out. The main stock of the tree is healthy and full of dormant buds, and, as the trees have a good root, I have no reason to believe that they will not start out again. I would like to know if the aloes and water, when applied heavily enough to make the rabbits let the trees alone, will injure the dormant buds above referred to and prevent them from starting and forming new heads for the trees.—PLANTER.

There is no danger of the preparation of commercial aloes injuring the dormant buds. Whether it is a perfect preventive of rabbits gnawing the bark is, perhaps, not so sure. The statement was made on information of parties who had tried it with that result; but, if there are many rabbits, it may take a good deal of bark to give them all bitters enough. We should try, also, wrapping the exposed stumps with newspapers. This will protect against sunburn, which is likely to come on trees bereft of foliage early in the season, and the rattling of the paper is also said to be preventive of rabbits. Repairing of the fence and the assistance of a few good greyhounds are also suggested as desirable.

Our experience is that buds on side branches will usually start well; but relying upon dormant buds upon the stump is not always satisfactory, because they are sometimes inactive. We have saved injured trees which were slow to start by putting in a graft at the point where branching of the tree is desired, and growth on this graft starts immediately and makes a good tree, if pinched to cause branching.

### Shipping Plums or Oranges?

TO THE EDITOR:—I have been thinking of planting on three acres of very good land a shipping plum, and I want to ask your advice as to varieties. The Kelsey Japan does well here, and seems to pay very well as a shipper, but are there not some newer varieties, which are good bearers and better sellers? I have heard of the Wickson, Burbank, and some others, but I know nothing of their qualities, and whether they can be dried, should the green fruit business not pay. I shall either plant the above, or orange trees. Kindly give me your ideas on the subject. Also please tell me where I could probably purchase 300 trees of the varieties you may recommend.—ARTHUR SHARMAN, Sultana.

The Japanese plums are often very profitable for shipping purposes, and as you have not a very early locality probably you would not need the earliest varieties, but a succession of Burbank, Wickson and Kelsey would pretty well cover the shipping season. There are other newer ones which are still on trial. These Japanese plums are not so valuable for drying and canning purposes as some of the old line European varieties, because they have less sugar content. All the leading nurserymen can furnish the three varieties named. Whether you had better plant these plums or oranges depends upon your location, soil and water supply. With all these things favorable, orange planting, so far as we can now judge, is a more promising proposition than growing plums for shipping.

### Elevations for Nut Growing.

TO THE EDITOR:—What is the limit of altitude at which nut trees will grow? I have been informed that 1000 feet is the greatest and we are 5000 feet above sea level. My young peach trees are growing and looking well, but are too young for fruiting.—ORCHARDIST, Landers, Wyoming.

One thousand feet elevation in California is perhaps within the upper limit of profitable almond growing, although on broad plateaus there are trees which bear very well some years at an elevation of 1500 feet, though frost injuries are frequent. The chestnut and walnut will stand greater elevation and are doing well on the foothills of the Sierra Nevada at the elevation of 2500 feet or more. At an elevation of 5000 feet in California little fruit is grown, except pears, apples, plums and cherries. The temperature, however, which some nut trees will endure, is quite low, as shown by the experience with chestnuts and English walnuts, particularly the former, in the wintry regions of the Atlantic coast. Where

you have a good, snug winter temperature, without alternations of heat and cold, but straight cold all through the winter, the trees are kept dormant and are sometimes safer than in regions where the temperature does not fall so low as with you.

### Grafting Pears—Erosion.

TO THE EDITOR:—I wish to work over Winter Nelis pear trees. Would it be advisable to graft to Bartlett pears? I notice in my peach orchard, where the heavy rains washed the soil from the roots, that there is a mat of small roots and root hairs all through the surface of the ground from the trunks of the trees to the middle of the rows. This orchard was plowed 8 to 12 inches deep last season, and cultivated thoroughly with disk till June, and then irrigated every seven days all summer. It appears to me that by plowing this season I will destroy said roots and injure trees. Would it be better to plow shallow or continue to plow deep? I have noticed quite a discussion in some of our papers in regard to sowing grass in orchards. Would it be advisable where a person has plenty of water, so as to keep grass growing the year round?—W. L., Auburn.

The Bartlett can be successfully grafted on the Winter Nelis, so far as growth and bearing are concerned. Whether growing Bartletts is satisfactory and profitable in your region you must ascertain by local inquiry.

You cannot save the small roots which have been exposed by erosion except by hauling in soil to restore that which was washed away. You cannot save them by not cultivating, because they will perish in the hot surface earth next summer, just as effectively as they would perish by the use of the cultivator; and not only that, but there would be constant loss of moisture by evaporation from the hot, hard surface. You must cultivate or plow even at the loss of the hair-like roots you describe. They will soon be restored or replaced by other feeding roots in the moist, firm soil below. But we should by no means plow deep under these conditions; plow shallow, or use a disk if the plow tears up too many roots, running just deep enough to keep the surface from baking—say about 4 inches.

You are in good position to try the effect of laying down your orchard. If you have a deep soil and plenty of water, sow alfalfa; if the soil is too thin over bedrock, try Eastern red clover. Do this on an acre at first and see how it works under your conditions. In this way you can at least prevent the soil washing, and that will be a great gain. Try it on the place which is worst washed, for that exposed subsoil probably greatly needs the humus from decaying vegetation.

### Those Moth Traps.

TO THE EDITOR:—I noticed in the PACIFIC RURAL PRESS of Sept. 7, in "Queries and Replies," your opinion was asked of the moth catcher. You replied that you had a trap running, but were not satisfied with the results; expected to try it a few nights. I have watched each paper for the result of your further experiment, but have seen nothing. You state that you caught four ladybugs. Are they night-fliers? Please state what night-flying moths are injurious.—READER, Arroyo Grande.

We were called away for several days and the experiment stopped right there. We might have taken more interest in its pursuit had we not known that we were catching several times as many friends as foes and did not have much appetite for continuing the process. If we had a corn patch which would give opportunity to try the trap on the moth of the ear worm we would try the experiment with a better outlook. Some readers having corn and traps should do this next summer. Ladybirds fly to a certain extent in the night but not largely, and to that extent will go to lights as moths do.

### Where Does Our Gopher Go?

TO THE EDITOR:—Can you tell me what other States besides California are infested with the pocket gopher the same as ours; also, what foreign country?—SUBSCRIBER.

Though there are several varieties of pocket gophers in the United States, the one which makes horticulture delightful in California is the same one which delights the whole western country west of the western boundaries of Minnesota, Nebraska, Kansas and Texas, and it covers Mexico also. Its company name is *Geomys bursarius*, and it is many times larger in its range than all the other American pocket gophers put together. We do not know what it does for the outside world beyond Mexico,

### The Primus Berry.

TO THE EDITOR:—Is there a blackberry called Burbank's Primus? Is it anything like the Mammoth blackberry, or are they one and the same thing? I have the Mammoth, but have heard that Burbank Primus was much better.—O. L. MARKLEY, Fresno.

Primus is a "blaspberry," which is a term proposed some years ago to cover all blackberry-raspberry hybrids, and we wish it had been accepted, for some one word is needed to cover the several crosses of these fruits which have been acceptably made. The Mammoth is a cross between two kinds of blackberry and has no raspberry blood in it. The two fruits are not alike and therefore hardly comparable. Certainly, the Primus has wider popularity at the present time, but its introduction was several years earlier than the Mammoth.

## WEATHER AND CROPS.

### Report of the U. S. Weather Service for Week Ending February 3, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

#### SACRAMENTO VALLEY.

Cold weather continued during the week, with heavy frosts. Rain Saturday night was beneficial to growing crops. Green feed has been somewhat damaged by frosts, and grain has made slow growth, but the cold weather is considered generally beneficial, especially to deciduous fruit trees. Grain is in excellent condition, and with warmer weather will make rapid growth. Prospects for heavy crops of grain and deciduous fruits were never better at this date. Pasturage is plentiful, and stock are in good condition.

#### COAST AND BAY SECTIONS.

Cold weather has prevailed during the week, with heavy frosts. Rain has fallen in all sections, greatly benefiting grain and pasturage. Green feed has been slightly damaged by frosts, and grain has made slow growth, but in other respects the conditions have been generally favorable. Farm work has progressed rapidly, and plowing and seeding will soon be completed. An unusually large acreage of grain and hay has been in Sonoma county. Tree and vine pruning are progressing, and in Santa Clara and Sonoma counties the acreage in vineyards and orchards is being materially increased. Almonds are in full bloom in San Luis Obispo.

#### SAN JOAQUIN COUNTY.

The weather has been cold and frosty during the week, retarding the growth of grain and causing some damage to green feed and unprotected citrus fruits, but benefiting deciduous fruit trees and vineyards. Rain at the close of the week greatly improved the condition of grain and pasturage. It is reported that in Kern, Kings, Madera and Tulare counties a great deal of wheat has been ruined by the dry weather, and a light crop is probable. In the northern counties grain is in much better condition, and will probably yield an average crop. Pasturage is scarce in some sections, and stock are not doing very well. Plowing and seeding are progressing.

#### SOUTHERN CALIFORNIA.

Cold, frosty weather prevailed during the first of the week, accompanied by rain and hail, and light snow in the interior districts and heavy snow in the mountains. The weather became warmer at the close of the week and light showers fell in most sections. Citrus fruits were slightly injured in some places by the frosts and hail. Grain and feed are improving rapidly, and prospects are much better than during January. In some sections it is reported that a considerable acreage of grain land will have to be reseeded. Plowing and seeding are progressing rapidly. Killing frosts occurred at many points, but ample warnings were given and the loss has been kept down by fires and smudges.

LOS ANGELES SUMMARY.—Cold week, with frost, rain, snow and hail, but reports say little damage if any to citrus fruits. Orchardists used smudge fires Sunday. Rain too light to do much good.

EUREKA SUMMARY.—There is some plowing and pruning, but farm work is generally much delayed by cold weather. Grain and grass are healthy, but continue making slow growth.

### Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, February 5, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the Week.	Minimum Temperature for the Week.
Eureka.....	3.04	20.11	31.49	26.13	52	30
Red Bluff.....	.82	12.46	17.16	15.08	56	28
Sacramento.....	.30	7.29	13.32	15.12	56	32
San Francisco.....	.25	7.28	14.24	16.33	54	38
Fresno.....	.14	2.66	8.30	8.33	58	24
Independence.....	.00	1.39	5.33	5.33	56	12
San Luis Obispo.....	.23	6.24	25.23	11.50	64	26
Los Angeles.....	.18	4.21	11.06	11.70	64	36
San Diego.....	.18	2.46	5.00	5.01	58	26
Yuma.....	.26	.48	.12	2.19	70	30



## HORTICULTURE.

### Frost Fighting With Coal Baskets Again.

In the PACIFIC RURAL PRESS of March 16, 1891, we gave an outline of the successful experience of Mr. C. C. Teague, of Santa Paula, Ventura county, in preventing frost injuries by the use of the coal baskets which have been so often described in our columns. Mr. Teague has had another year's success, which our readers will be glad to know of—especially those who desire to experiment with this method in protection of deciduous fruits.

**EXPERIENCE IN DECEMBER LAST.**—At the time of the December freeze, the cold portions of our grove were protected by 5000 coal baskets, thirty-seven to the acre, or about one basket to three trees, except on a small portion, which had only one basket to five trees. These baskets were so distributed that one-quarter, one-half, three-quarters or the whole could be lighted and still have the heat equally distributed. December 11th and 12th were our coldest nights: It became apparent early in the evening of the 11th that the cold would be severe, and as we consider our thirty-seven baskets to the acre rather light protection, our greatest anxiety was to keep our supply of coal for the time when it would be most needed. In other words, to be able to judge of exactly how long we could delay firing without injury. I wish to strongly urge upon the growers the importance of this point, for in my opinion the value of baskets as protection much depends upon the good judgment of the operator.

**WHEN TO FIRE THE BASKETS.**—I consider a little plan that we adopted, as a guide to the time to light the baskets, the most valuable of our experience. We found that the self-registering tested thermometers which we had were utterly unreliable as a guide, and that if we had been governed by them and had followed out the advice of all of our authorities on frost protection we would have burned up our coal early in the night when it was not necessary, and our grove would have frozen in the earlier, colder hours of the morning. When our thermometers registered cold so early in the evening, we were in a quandry as to what to do. We feared if we refrained from lighting too long we would be injured, and on the other hand, if we lighted early our coal would not last. While worrying over this, the thought occurred to us to put out shallow pans with about an inch of water in them, reasoning that the latent heat in the trees and fruit would keep the juice in the fruit from congealing and therefore without injury until the water in the pans began freezing over.

**HOW THE PANS PERFORMED.**—Developments proved that we were right, as I shall attempt to demonstrate to you. Our experience on both of our coldest nights, the 11th and 12th, was almost identical, and I have selected the 12th, which was the colder, and the following is the record of our thermometer on that date:

7 P. M.	32°
8 P. M.	28°
9 P. M.	26°
10 P. M.	24°
11 P. M.	22°
11:30 P. M.	21°

At this time the water in the pans began freezing over, and we began lighting our baskets.

**HOW THE FIRING WAS DONE.**—Our men were divided into squads, each squad being in charge of a competent man. Our reason for this was that it would be economical to have a large crew of men working together, as they would be obliged to do a great deal of unnecessary walking. In other words, a crew of forty men lighting on forty rows would oblige the man on the first row to walk across the end of forty rows to reach the forty-first, or his next row. On the night in question we had forty men lighting and it took from one and a half to two hours to light 2500 or one-half of our baskets.

**EFFECT OF THE FIRES.**—At 12 o'clock, midnight, before the baskets were well under way, and giving off a good heat, the thermometer registered 20°; at 1 o'clock, 22°; 1:30, 22°. At this time we began lighting the other half of our baskets. Two o'clock, 22°; 3 o'clock, 24°; 4 o'clock, 26°; and the thermometer did not register below 26° after this time. Please note that the thermometer registered below 28° for three and a half hours before the pan of water was frozen over, and for four hours before the temperature was affected by our fires. Also that the drop in temperature up to the lighting had been about 2° per hour, which was checked and forced up until, when all of our fires were going, it reached 26° and did not again get below this, notwithstanding the fact that the temperature usually continues falling until sunrise, unless a breeze sprung up, which in this case did not occur.

Notwithstanding this, however, our thermometers registered below 28° for ten hours without injury to our trees and lemons. I cannot account for this, except that possibly after we lighted our fires the heat and smoke rising from them and hanging over the grove acted as a sort of a blanket, preventing the cold air from settling. Our thermometers are hung

on posts about 3 feet from the ground, and it has been suggested to me as an explanation of the low temperatures shown by the thermometers, resulting in no injury, that the heat radiating from the baskets would radiate in streaks, and that the whole body of cold air would not necessarily become heated, and the thermometers being protected by the posts and boxing, would not be sensitive to the heat radiation, and would therefore read colder than the temperature in the grove was in reality. I have since regretted that I did not take the temperature 10 or 12 feet from the ground.

In a few of the very coldest spots in our grove, there is a slight singeing of the tenderest leaves, but nothing of any consequence. The portion of the grove where this singeing is most in evidence is a small portion where I have before mentioned, and which had only one coal basket to five trees.

**IN CONCLUSION.**—I will say that after two years' experience with coal baskets, I am more than convinced that by careful and intelligent coal handling, we can save our groves and fruit during our most severe freezes. We concluded that with thirty-seven baskets to the acre, we were running too close to the danger line, and have since doubled our supply, and I would recommend that seventy-five to the acre be used in groves that are subject to frost visitation. It is not probable that it will be necessary to light all, only in extreme cases, but the extra insurance is well worth the outlay. It is also certain that a small operator would not get nearly as good results and should therefore have more baskets to the acre.

My last word is, do not forget the importance of knowing when to begin lighting. And if you will remember the pan of water, it will save your nerves.

### Budding Citrus Fruit Trees.

By S. A. BAGGS, Horticultural Commissioner Tulare County, in the Lindsay Gazette.

Rebudding has been practiced for many years; more extensively in California during the past six years. Many ways have been introduced. Of the many I will only mention the three most commonly practiced.

At first only a portion of the limbs were cut from the tree in the early spring, usually during April, and enough of the new shoots were allowed to grow until October when buds were inserted, strings being used to wrap them, and being left on until the buds had healed in and formed a union. Then they were removed and the buds left in a dormant state until the following April. Then the shoots containing live buds were cut three or four inches above the bud, and most of the remaining top, for the purpose of forcing a new growth into the bud, and starting a new growth of shoots on the remaining limbs to bud into the following October, when shoots were budded and treated the same as the previous year. In case buds died they were inserted in the following spring. As soon as these healed in they were cut and treated in the same manner as the first. All cuts were painted when limbs were sawed off. This proved to be a very slow method of converting a tree from one variety to another, and the following way was then introduced:

The entire top was cut from the tree with the exception of one small limb, which was left for the purpose of keeping up the flow of sap. Enough shoots were then allowed to grow for the purpose of budding into the following October, when they were budded into in the same manner as formerly. They were then left in a dormant state until the following April. Then the shoots containing live buds were cut off three or four inches above the bud for the purpose of forcing the bud to start; and shoots in which the bud had died were rebudded and allowed to remain wrapped until they were healed in. Then the shoots containing new buds and the remaining limb of the tree were cut off, and the tree allowed to form a new top, keeping off all suckers. This method, though an improvement on the other, was not satisfactory, as too much time elapsed before a top could be formed. Then the next method was introduced which is practiced at the present time in the older planted colonies. The tree is first pruned, all desirable limbs are cut off in a smooth manner in line with the flow of sap, all cuts being properly waxed. The buds are then inserted into the bark of the remaining limbs in a uniform manner, and wrapped with waxed cloth. The waxed cloth is left on until the buds are entirely healed in. The time in which buds take to heal in depends upon condition of season and vigor of tree. As soon as buds are properly healed in the limbs containing live buds are removed cutting them close to bud, the cuts waxed, the trees whitewashed and the trunks wrapped with burlap, or budding paper, for the purpose of protecting the trees from the rays of the sun. The limbs which do not contain live buds should be rebudded as soon as the cloth is removed, and should be left standing until the buds are properly healed in. After the limbs are removed the buds and suckers commence to grow. When buds have grown to the length of a foot they should be cut back to the length of six inches, and all suckers removed. The suckers should be removed and the buds pruned back as the growth progresses during the summer months. The earliest possible moment that the bark will raise in the

spring is the most favorable time to do budding in this manner and will give the best results.

Success in budding depends largely upon the condition of the tree, the quality of buds used, and the skillful manner in which the work is done.

### Frosted Olives and Oil Making.

**TO THE EDITOR:**—In connection with the discussion about olives shriveled from frost or other cause, the experience at the Foothill Agricultural Station this winter may be of interest. The olives here were picked and worked up in two lots, as the oil making was a side issue and had to give place to other work. The first lot was picked Dec. 12th to 16th, and ground and pressed Dec. 18th to 19th; the second lot picked Dec. 26th to 28th, and worked up Dec. 31st. All were subjected to sharp frosts while on the trees, as the following frost record shows: Dec. 7th, 29°; Dec. 8th, 30°; Dec. 10th, 30°; Dec. 11th, 26°; Dec. 12th, 26°; Dec. 13th, 23°; Dec. 14th, 28°; Dec. 15th, 28°; Dec. 16th, 30°; and a large proportion of the fruit was more or less shriveled. A tree of Rufa in a low, cold place suffered most, the entire crop being badly shriveled, and much of the fruit still green.

It should be said, however, in justice to the variety, that Rufa in a warmer location suffered much less. The little Redding Picholine, as usual, exhibited its merit of hardiness, being quite uninjured to all appearance.

This latter variety was kept separate in the first lot, which included the bulk of the Picholine fruit; aside from this the different varieties were worked up together, being simply assorted roughly into two sizes for convenience in grinding. The pomace was put in the press indiscriminately, the juice collected in common receptacles and mixed in the separating funnels, and the oil finally all blended.

In the second lot the amount of Picholine was too small to make a separate pressing, even in the small press used, and it was therefore worked with the other varieties.

The writer makes no claim to expertness in judging olive oil, but he has partaken from time to time of a number of the best California oils on the market, and in his estimation the product of the mixture of frozen and unfrozen olives, made with somewhat crude appliances, would not suffer much in comparison with any of them.

To come to the point, what he would like to know is how low the temperature must fall to render olives unfit for oil making, as Mr. Kirkman evidently deemed his. Authorities are agreed that frost injures the fruit of the olive. Among Californians, Wickson says "a slight fall below freezing point injures the fruit" (California Fruits, third edition); Hayne declares, somewhat characteristically, that "once an olive has been frosted, it is next to impossible to make a salable oil out of it, and it is quite impossible to make a pickle that can be eaten" (Cal. Experiment Station Report, 1894), and Lelong goes so far as to fix the critical temperature, stating that "26° is fatal to the fruit" (Report on Cal. Olive Industry, 1900). Common observation confirms the fact that even a slight degree of frost may seriously affect the keeping quality of olives, thus rendering them, to that extent at least, unfit for pickling; but is it so well established that frosted olives will not make good oil if worked up soon after picking?

J. H. BARBER.

University Experiment Station, Jackson, Cal., January 28.

### Bees and Pear Blight.

Eugene Secor of Forest City, Iowa, general manager of the National Bee Keepers' Association, has something to say of California in his report submitted at the beginning of the present month. We quote the following:

A great commotion was started in California last spring on the charge that bees carried pear blight, and in one county the Board of Supervisors was petitioned to remove all bees at least two miles from the pear orchards. In the subsequent discussion on this subject certain orchardists and bacteriologists have made grave but reckless charges against the bees, as though bee keepers had no rights which fruit growers ought to respect. It seems to be forgotten that bee keepers were in California long before pear growers, and, according to the reasonable law of priority, were entitled to the field.

I know nothing about the conditions in California, but in my own locality bees were kept many years before twig blight appeared. How did it get here? Did bees bring it? No one believes they did.

If bees are so guilty, how does it happen that trees blight which never had a bloom on them? Why do they blight mostly long after the blossoming period, which is the case here? Why do they blight badly one year and not the next? If bees are guilty as charged, what good would it do to banish the domestic bees when the legions of wild ones would be left to carry on their work of destruction?

I am satisfied that, when the whole truth is known, this unjust persecution will cease, and every thoroughly scientific observer will take his hat off in the presence of God's busy handmaiden—the wonderful, the useful, the necessary bee.



## ENTOMOLOGICAL.

## Spraying for the Codlin Moth.

By A. S. ROWE of Downey, at the Compton Apple Growers' Convention.

The one question of vital importance to the apple grower is: How can I exterminate the codlin moth? To a scientific observer it would seem that the State Board of Horticulture was groping in the dark in regard to the habits and destruction of this insect, and have not up-to-date instructions for distribution to the public. Bulletin No. 71, on insect pests and remedies given out by that Board, contains, to myself, only meager and antiquated instructions, deplorably inadequate and of but little practical use in contending with this pest, the codlin moth.

**THE EGG LAYING.**—The scientists writing in that bulletin regarding the codlin moth, the time of its maturity, and its habits, allow themselves a great deal of latitude, apparently not having investigated sufficiently to state the facts positively. They say: "The codlin moth appears in the spring about the time of the blooming of the apple, pear and quince, and deposits its eggs just as the fruit is forming." Had those investigators reasoned from cause to effect and observed more closely, they would have found that nature was far too wise in her method of working to permit anything of the kind, for, if it was a fact that the moths deposited their eggs on the fruit so early, it would be so small that before the larvæ had attained their growth they would have entirely consumed the fruit, as the average time from egg deposit to mature larva under normal conditions is only twenty-one days. Of the fruit that is infested with worms there is not more than one in a hundred that is touched by the moth while they are as small as a damson plum. The injurious effect produced by the worm on those that are so great as to cause them to wither and quite frequently fall off prematurely, while the worm is still in them.

**THE LARVÆ.**—In Bulletin No. 71 it is stated: "The larva of the codlin moth attains its full size in about three or four weeks from the time of hatching. The change in the early brood occurs in about three days. The insect remains in this condition about three weeks, when the moth emerges from its chrysalis. The second brood occurs usually about the latter part of July. This brood generally attacks the later apples and pears." Now, from the preceding quotations, the average time from egg of first brood to moth for second would be fifty-four days, and if the codlin moth deposited its eggs for the first brood just as the fruit was forming, this would make the moth for the second brood appear about the last of May, instead of the last of July, as stated. There would be a space of nearly two months not accounted for in these calculations. We can see at a glance the fallacy of the above statements.

In the State of Washington, where I made my observations, I found the codlin moth came out in the spring as soon as the weather was favorable and began to deposit its eggs on the fruit when it was about the size of a damson plum. Six days is the average length of time it takes the egg of the codlin moth to hatch, varying a little, owing to weather conditions. The larva matures in fifteen days, not varying more than two days either way from this time.

The larva spins its cocoon and changes to a chrysalis in seven days, and in seven days more the moth emerges, making an average of thirty-five days from egg deposit to moth. This, however, is only true of that portion of the larvæ that nature intended for the reproduction of broods for that season. About one-tenth of each brood of larvæ, as near as I can estimate, remain in that condition until the next season. I have known larvæ hatched on the first of July to hatch over, coming out a moth the middle of the following May. One brood continues to succeed another as long as the season permits.

**THE BROODS.**—The broods vary in number from three to five, owing to the length of the season, instead of being but two, as stated in the bulletin. The warmer the climate the greater the number of broods. This is proven by the fact that we seldom find more than one worm in an apple at the same time, occasionally two, but very rarely three, though often we see from three to five worm holes in one apple.

The codlin moth deposits its eggs on the leaves and limbs of the tree, on the fruit at the stem, on the side, in the calyx—wherever it happens to rest at the time. Where the egg is deposited there the larva enters the fruit. The larvæ from the eggs that are not deposited on the fruit seldom, if ever, find their way to it. The latter fact undoubtedly accounts in part for the small increase of moths, when compared to the number of eggs each moth is capable of producing, which is about eighty.

The theory that the natural instinct of the larvæ of the codlin moth to seek the calyx should have been discarded with that other antiquated theory of the moth depositing its eggs exclusively in the calyx. The reason a majority of the larvæ enter through the calyx is that it protects the eggs and young larvæ from their natural enemies, while only about one-third

of the larvæ from eggs deposited on the surface survive to penetrate it.

The reasons for there being so few of the codlin moths in the spring are two: First, a great many die, others are destroyed by their natural enemies. Second, the moths do not all appear at the same time, but keep coming for a month or more after the first have made their appearance.

**SPRAYING.**—The instructions of Bulletin No. 71 for destroying the codlin moth say: "Spray as soon as the blossoms drop and before the fruit turns downward; a second application should be made about sixteen days after the first, and, when required, a third and even a fourth application for late varieties at three-week intervals."

From my experience, the above instructions would be of little use. There is no provision made for destroying the larvæ that enter the fruit other than by way of the calyx. Three-quarters of all the destruction caused by the codlin moth is done after the fruit is one-half grown. The fruit infested with larvæ before it is that near grown most invariably drop off prematurely and never reach the market basket. Even were it not for the dissipating effect of the elements on the spray that was deposited on the fruit, the growth alone would so widen the spaces between the particles of poison by the time the moth had begun its work that the chance for killing the larvæ would be exceedingly small. Following the above directions, the last application would be made about the time the work should begin in good earnest, which should be kept up at intervals of about fourteen days until the fruit is harvested.

**PHILOSOPHY OF SPRAYING.**—The question with many is: What kind of a spray nozzle is best? To my mind, there is but one perfect—that is the Cyclone nozzle. Why? Because the action of this nozzle separates the water into the finest particles possible when the proper pressure is applied. The object of the spray is to get as heavy and even coating of poison on the surface of the fruit as is possible. To do this intelligently we must make a thorough investigation of every minute detail of the mode of appliance and the action of certain innate laws or forces of nature upon and in that which is applied, namely: those of gravity, cohesion and adhesion.

The natural inadhesive surface of the fruit to water is such that if it is subject to a coarse, heavy spray, the most of which does not glance off, will form into heavy drops and fall.

In this instance we see gravity and cohesion are the strongest forces exerted. Again: Let us diminish the spray one-half finer, using less force. The result is the water remains on the surface of the fruit, but in large beads, the small running into larger, leaving dry spaces between each. In this cohesion and adhesion are the acting forces, cohesion the stronger. A second time let us diminish the size of the spray, making it as fine as possible. The result is a thorough wetting of the surface of the fruit. Hence, by a fine spray we prevent gravity and cohesion from exerting their influence and allow the inherent force to dominate, which is weakest of the three forces. By this we gain the required result, proving the fine spray best adapted for this purpose.

**SUMMARY.**—Then it would seem to me, by a summing up of investigations, that the proper way to deal with this pest, the codlin moth, would be to fight it during the breeding season by spraying with London purple and Paris green, one-half pound of each to 200 gallons of water, beginning when the fruit is about the size of a damson plum and continuing at intervals of about fourteen days until harvested. In my own experience, by following these methods, I was enabled to save 90% of the fruit, also using such means for destroying the larvæ as banding the trees with sacks, scraping off the rough bark and keeping the ground free from fallen fruit and leaves. And, again, we should protect such worm destroyers as the cacack, yellow-hammer and striped woodpeckers.

**HOW ANOTHER GROWER SAVED 95 PER CENT.**—According to the Northwest Horticulturist, Mr. F. Walden, Zillah, Wash., picked over 12,000 boxes apples from his orchard last season with less than 5% wormy fruit. He sprayed five times and used one-half pound Paris green to forty-five gallons of water for each spraying. The Paris green cost \$20.43 at the station, Toppenish. It tested 57% pure. About five pounds of copper carbonate (blue vitriol) was added to the 45-gallon mixture for the first spraying. Mr. Walden thinks that another season he will use the copper in connection with the Paris green for at least five sprayings. A strong 2 H. P. pump and two men did the work, which began as soon as bloom had fallen and continued at intervals until September.

In connection with the spraying, bandages were also used around the trees for trapping the cocoons at the transformation stage of the moth, and these bandages were examined regularly every week. Some of his close-by neighbors, who did not spray or trap for the codlin moth with any regularity, had more than 40% of their apples destroyed by its ravages. The cost of spraying to Mr. Walden was, perhaps, less than \$250. It made a difference in the value of his fruit crop in favor of spraying of more than \$3000. Unless better remedies are discovered, Mr. Walden proposes to continue controlling the codlin moth in the satisfactory way it was combatted last season.

## THE DAIRY.

## The Creamery Operator and the Merchant.

By MR. THOMAS HODGE of San Francisco, at the California Creamery Operators' Convention.

Co-operation and consolidation are written on the banners which lead in the modern vanguard. It will certainly redound with credit to the rapidly developing creamery industry when those who are deeply interested in its welfare, either from the standpoint of a producer of milk, or that of one who attaches himself to this vocation for a livelihood, are desirous of probing into every available channel relative thereto, directly or indirectly, and, casting aside all petty grievances, put their combined efforts to the wheel and spare nothing to see that justice and equity are served.

It may be said as a compliment to the modern creamery operator and butter maker of this State that the merchant never permits an opportunity to escape that he does not point with pride to the tremendous progress that is manifest in the creamery business on the Pacific coast, which unquestionably is largely to the credit of the scientific and conscientious operator of the creamery.

**FUNCTION OF THE MERCHANT.**—So far as the development of the creamery interest in itself is concerned, the merchant may be considered a nonentity. Yet, with the mutual co-operation of the butter maker and the merchant, the creamery industry will rapidly force itself into the commercial world in such vast proportions that capital will be attracted and must embrace the opportunities which it provides. While it will not be said that the merchant is a parasite, nevertheless his success, as a distributor of the product of the creamery, depends largely on the ability of the operator to manufacture an article that will not blush at competition.

Thanks to the common sense, up-to-date butter maker, he is rapidly pressing out of existence the "man who knows it all." A very tender subject to touch upon in times goes by has been that of the merchant informing the butter maker of important changes necessary in the methods of packing or preparing his product for market for fear that, because of ignorance or obstinacy on the part of the butter maker, it might cause a discontinuance of shipments, and, while this has not been general, nevertheless there has been a reluctance oftentimes on the part of the merchant along this line, which ultimately did not prove beneficial to the best interests of the creamery. I feel confident that I voice the sentiments of the majority of merchants, however, when I reiterate the fact that the merchant and the operator are becoming, as it were, more welded together; hence, we anticipate more satisfactory results in general will be gained in the future.

**THE CREAMERY MAN.**—We, as merchants, and the dairyman, usually the financial representative of the creamery, must concede that the creamery operator or butter maker is the pivot upon which depends the success or failure of a creamery enterprise. He is the man who must see that the milk is pure and clean when delivered to the creamery. Through his congeniality, executive ability, and without causing friction, he must have complete control over his patrons from whom he secures his milk. He must seldom expect words of encouragement from the patron, and not at all times will he be considered an infallible man, especially on test days; hence, when not anticipating words of commendation, should they be voluntarily offered, the recipient is much more elated. This extract is drawn from the record of the merchant, who seldom through a season is bedecked with garlands of love and affection bestowed by the hands of his esteemed customer. Notwithstanding this, he must continue plodding along until the goal is reached, looking forward to such occasions as to-day, when the operator and merchant shall compare notes and each receive consolation from the other.

**UP-TO-DATE APPLIANCES.**—There are, no doubt, some creameries where the chief operator is unable to attend to all minor details personally. In such cases, beyond question of doubt, he should have such assistance as will accept his instructions, so that there may be no clash of responsibility. There should be but one head. The operator should keep thoroughly in touch, in a scientific manner, with all improvements in his line of business. The expense of up-to-date equipment is but slightly in excess of that which is required to operate with the methods which are ancient and fossilized. The inevitable results thus obtained to the creamery are vastly in its favor. He should be conversant with the continual changes in the market, should acquire a thorough knowledge of the demands of the different markets which are supplied directly or indirectly by him, and, instead of attempting to force the consumer to meet with his terms and methods, so far as the marketing of the butter is concerned, he should put forth every effort to pack it in such style as would be instantly approved and accepted by the trade generally. In fact, the butter maker should strive to lead and not follow, in creating a demand for the article which he manufactures. There is no question but that the best interests of the dairymen and the capital invested in



the creamery are more satisfactorily served when the operator or butter maker of the creamery and the merchant or distributor of the product are most congenial, each putting forth every endeavor to assist the other.

**CITY VISITS.**—The butter maker should come to the city whenever opportunity offers. Do not stand on the sidewalk and endeavor to ascertain whether this or that is the house to whom your consignments are made, by consulting the empty butter boxes in front of the store; but go inside of the store, make yourself known to the proprietor, have the salesman show you his tricks, and learn all you can of the method by which butter is handled in the market. Changes in the manner of marketing are continually occurring, each successive season presenting new demands, as the supply of butter increases. It should be a satisfaction to the operator of the creamery to know that his representative in the market is so quite up-to-date that he is repeatedly presenting to the butter maker the latest ideas, which, if heeded, will in a short time place him as a creamery operator in a position which will cause him to be envied by his less attentive colleagues, who will wonder why his product is in such good repute that he is continually a favorite for the best positions offered.

**THE RUSTLE OF THE WINGS.**—We, as merchants, will all be delighted to extend to you such courtesies to which you are entitled, and it is possible that, if you are not pleased with the methods of the house to whom you might be making consignments, the manager will inconvenience himself to introduce you to his competitor across the street, whom he might decide could handle your product to better advantage, for if there is a market in the wide world where one merchant is more interested in the welfare of his brother merchant we are anxious to learn of its whereabouts.

#### Report of Cow Tests at the Pan-American.

**TO THE EDITOR:**—Dear Sir: In view of the fact that no complete report of the results at the Model Dairy at the Pan-American Exposition has been hitherto sent out by the authorities of that affair, I venture to send you the final figures of the ten breeds of cows represented in the test, showing yields and profits in the four points on which prizes were given. The many breeders (upwards of 60,000 in the United States) of Holstein-Friesian cattle residing in the territory covered by your publication will be greatly interested in this report, and will appreciate a report in which the absolute facts of the test are given:

Final Report of the Ten Breeds of Cows Represented in Six Months' Test at Pan-American, Showing Yields and Profits in the Four Points on which Prizes were Given.

BREED.	Lbs. milk.	Per cent fat.	Lbs. fat.	Estimated but- ter lbs.	Value butter.	Churned but- ter lbs.	Value.	Per cent total solids.	Lbs. total solids.	Value total solids.	Gains in live weight lbs.	Cost feed.	Profit on esti- mated butter.	Profit on churned butter	Profits on total solids	Profit on total solids plus gain in weight.
Holstein.....	39260.2	3.25	1275.8	1501.0	375.25	1430.3	357.57	12.47	426.80	391.16	164.66	211.64	192.88	262.44	274.37	
Ayrshire.....	32998.2	3.69	1219.4	1434.7	358.67	1415.6	353.90	12.64	376.68	220.14	140.98	217.70	212.92	235.70	242.30	
Shorthorn.....	31885.6	3.57	1138.8	1339.6	334.90	1307.5	326.89	12.84	367.79	802.16	127.28	172.81	164.80	196.79	220.85	
Brown Swiss.....	30892.6	3.63	1123.1	1321.35	330.34	1296.4	324.10	12.73	394.38	198.17	126.26	183.08	176.84	207.67	213.61	
Red Polled.....	28694.9	3.98	1141.81	1343.3	335.85	1319.45	329.86	13.1	377.3	339.64	138.03	197.82	191.83	201.61	212.68	
Guernsey.....	27127.6	4.60	1248.1	1468.3	367.10	1429.4	357.36	13.9	377.5	195.13	136.99	230.11	220.37	202.89	207.65	
Jersey.....	26987.1	4.58	1234.9	1453.0	363.25	1409.1	352.28	13.6	377.0	139.30	137.74	225.54	214.54	201.66	207.23	
French Canadian.....	24664.7	3.99	984.1	1157.7	289.45	1179.6	294.91	13.3	328.7	295.85	113.10	176.35	181.81	182.75	191.39	
Dutch Belted.....	24893.5	3.4	847.5	997.0	249.25	977.1	244.27	12.3	306.6	275.97	132.32	116.89	111.91	143.61	154.89	
Polled Jersey.....	20328.8	4.66	948.31	1115.6	278.90	1080.25	270.06	13.9	283.1	254.84	109.47	169.61	160.59	145.43	153.68	

In summarizing these figures it may be said that the Holstein-Friesian cows made 6262 pounds more milk than their nearest competitors; they made thirty-three pounds more of butter and \$8.15 worth more than their nearest competitors; they made

\$54.97 more profit on total solids than their nearest competitors. The Holstein-Friesian cows made a greater gain in live weight than any of their competitors among the dairy breeds, and were exceeded only by Shorthorns, and they made \$32.07 worth more profit on total solids, plus gain in weight, than their nearest competitors. These results were gained at an expenditure of \$2.57 more for feed than the next largest consumer. F. L. HOUGHTON,  
Sec. Holstein-Friesian Association of America.  
Putney, Vt., Jan. 18.

### THE POULTRY YARD.

#### Chickens by Incubator and Brooder Route.

California poultry people, especially the beginners in the art, will be interested to read the hints which Anna F. Cameron of Nebraska gives the Practical Farmer from her experience with up-to-date methods in bringing forward young fowls:


**INCUBATORS.**—There are several good makes and instructions accompanying any one selected should be studied carefully. It might be well, after gradually raising to the required temperature, to run the incubator a couple of days before putting in the eggs. I turn the eggs twice every day. I open the doors, pull out the trays, run my hands all over and cuddle and move the eggs about and give them a breath of fresh air. After they have been sitting a week or more I test out the infertile and bad eggs, and save the infertile for chicks' food. On the eighteenth day when I take the trays out I fill the nursery underneath with chaff or cut straw (don't use bran, for the chicks will pick and eat it and cause serious indigestion, nor paper, as it is so hard and slippery you will have cripples), sew the thermometer securely to the trays, so the chicks can't turn it over and you can always see what the heat is running at. Give the eggs a good, long cooling, turn them over, put them back in, and that night you may expect to hear some chirps. I have often had them begin hatching on the nineteenth day, and all good, strong chicks will be out by the morning of the twenty-first day.

**THE BROODER.**—Now comes the next great step in your work—the brooder. I got a 200-chick capacity; it is only large enough for 100. Better have two brooders. There was a curtain run through the center. It was of no use and I took it out, as every part of it should be warmed at first to 90° to receive these little babies. I have my brooder in a snug little house, 6x8 feet, with a large window on the south

cool. On the floor of my brooder I have an inch or more of fine chaff or cut straw, anything that is very soft and they can scratch in, and when the warmth is just right—90°—I transfer these little baby chicks the twenty-second day after I put the eggs to hatch.

**FEEDING.**—The first feed is fine grit and oat meal. Their next is bread and meal (that is, stale bread ground through a bone cutter) moistened with scalded milk. These are the foods for the first day, in small quantities. The next day I put milled seed in chaff, and an infertile egg boiled tender (that is, an hour or more), mashed with stale bread meal. Grit is always before them in shallow cups. For drink I invert a cup in a saucer and insert a small nail under the cup, so there is water in the saucer all the time. I usually feed six times a day, giving as much variety as possible by adding cooked meat that has been ground through the bone cutter, and also curd from milk, grated raw potatoes, cooked potatoes and other vegetables, never giving a great deal of any one thing at one time. I use up the infertile eggs of each brood as food for this brood, being careful not to give much at any time. After they are ten days old I give them green bone, selecting out the fine with more meat than bone. I feed cracked wheat and ground corn as they grow older. I scald bran and cracked corn with milk and give them sour milk to drink once or twice a day. Don't fail to clean out your brooder every day and put in a clean bed of chaff and clover screenings at night. Throw all the old chaff on the floor for them to scratch over. I let them run out of the brooder when three days old. Clean your brooder house every few days. Outside on the floor I use cement or gunny sacks and hang out on the fence when done eating, so that they never have any stale or sour food. I clip up fine alfalfa that is young and tender, about four quarts daily, after they are ten days old. They will eat it all. Now they have the door opened into the scratch shed, which is all enclosed tight except the south side, and this has chicken wire fencing except that at the bottom there is a space of 5 inches, where I have a movable board that can be raised or lowered so that the little chicks can be shut in or out, but no large chicken can enter.

**ADVANTAGES OF THE BROODER.**—No clumsy old biddy to step on them, no crowding, no possibility of any marauding cats or rats to take them, no being called out of his warm bed at daylight to be trailed through the wet grass and chilled. Be sure your chicks have plenty of ventilation, but no drafts. I take a peep into this house the last thing at night and see that all is well. I had but one die out of my first brood this year; raised all the rest to broiler size. My largest hatch this year was 174 out of 200 fertile eggs. Last year I had one hatch of 191 out of 205 fertile eggs. I would not think of hatching chicks with hens; it is so much less work and so much easier with an incubator—no broken eggs or deserted nests. Besides, the time Mrs. Biddy wastes trying to hatch a few chicks could be so much more profitably employed producing eggs. It would take fifteen hens to hatch an raise 150 chicks—an average hatch for a 200-capacity incubator. These hens would loaf around on an average ten weeks, or 1050 days. Just see the eggs you could have got; then figure on what you would lose in trying to raise 500 or more chicks with hens. But I can best illustrate this by giving a summary from my books. Last year I began with 104 hens and eight cockerels. I killed and sold until I only averaged seventy hens for the year, yet I sold \$77.50 worth of eggs at about an average of 10 cents per dozen. I had all I wanted for house use for a family of six and for incubators. There would have been a very small surplus of eggs had I used my hens for incubating purposes and to raise the chicks.




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## Agricultural Review.

### KERN.

**IMPROVING LIVE STOCK.**—Bakersfield Californian: General William Shafter, who resides on his ranch near Bakersfield, is devoting some of his time since his retirement from the army to the raising of fine hogs, of which he has several superior strains. Recently he has imported a herd of Poland-Chinas from Illinois, Ohio and Iowa, selections having been made from the best samples of stock in those States. Equally careful attention was given to some Berkshires that have recently arrived from England. Ohio was also drawn upon for a few Duroc Jerseys, a large, red, hardy hog. A curiosity in pigs can now be seen at the Shafter ranch, a litter of a cross between the Duroc Jersey and a Philippine breed, that is about equally divided in color by a horizontal line, black above and white beneath. The pigs, inheriting the tendency of both parents, are more or less variegated.

### KINGS.

**QUEER FREAK OF NATURE.**—Hanford Journal: Manuel Brazil, a well-known sheep man, who has his flocks 7 miles south of this city, brought into Hanford a curiosity in the sheep line. One of his ewes gave birth to two healthy lambs and to part of a third lamb. The third animal is really only the hind part of a lamb, and must have lived till it got nearly as large as one of the lambs. It has no head or shoulders—only the hind quarter. Mr. Brazil shipped the strange freak of nature to a friend as an anatomical wonder.

**BEET GROWING.**—Lemoore Leader: The Chamber of Commerce is wisely trying to awaken an interest in beet growing in this county by offering \$75 in prizes to farmers growing the best crop of this product. The beet sugar industry is one that is bound to come to the front in this county, especially on lake lands. Down at the lake there are thousands of acres of land that will, without doubt, produce beets of a fine quality. At a meeting held recently in Hanford the Chamber of Commerce voted unanimously that \$75 in prizes be offered for beet growing, as follows: For the party producing the best half acre of beets, \$50; second best half acre, \$15; third best half acre, \$10.

### RIVERSIDE.

**CEMENT INJURES ORANGES.**—Enterprise: The Colton orange groves are safe. Mr. Albright, foreman of the California Portland Cement Co.'s works, has received a letter from the directors of the company to make several improvements at the works, and the improvements will have a double value. They will not only tend to increase the output of the quarry, but they will also include the placing of the necessary screens to prevent the cement dust from being carried by the wind onto the neighboring orchards. This dust has been gradually killing the orange trees in the immediate vicinity of the quarry, and a complaint in regard to the matter was made to the directors.

### SAN BENITO.

**DOES A SMALL RANCH PAY?**—Holister Bee: Below you will find a statement of what was sold from a sixteen-acre ranch near Dos Palos during 1901: Butter fat, \$426.33; butter, \$37.05; poultry, \$8.75; eggs, \$38.67; fruit, \$10.87; calves, \$68; hogs, \$52.63; hay, \$40. Total, \$682.30. The above amount of butter fat and butter was sold from ten cows, besides what the family used. I have now five calves worth \$50; ten shoats, \$40; one colt, \$50. The above were also raised during 1901.

### SAN BERNARDINO.

**A PIE MELON RECORD.**—Chino Champion: Pie melons are not such an unpretentious crop after all, when their productiveness is in question. Isaac Goble reports a yield from the seed of a single melon that can not be easily equaled. As the resultant crop he harvested fifty tons of pie melons. Since he sold his crop there has been good demand for pie melons for cow feed at \$2 per ton. That makes a very profitable crop, especially when it is considered that the expense connected with raising it is very light.

### SAN JOAQUIN.

**BIG ACREAGE OF RYE GRASS.**—Lodi Herald: Warren Fowler, who took the contract of putting in 700 acres of rye grass on Dr. Cross' Terminous land, has completed the work. He kept busy two drills, one harrow and one plow team three weeks. The land will be devoted to stock and dairy cows.

**ATTACKED BY AN ENRAGED HOG.**—Frank M. Brown, a well-known farmer, living at Elliott, in the northeastern section of this county, was severely injured last week by an enraged hog, which badly mangled his left hand. Brown went into the pen where the sow had a litter of

pigs, and the animal attacked him, standing on her hind legs and making a lunge at him. He used his hands to prevent the sow from biting him in the body, and she grabbed his left hand and crunched the bones so that several of them had to be removed by a surgeon.

### SANTA BARBARA.

**PLANTING SEEDS.**—Press: Following the recent rains the forest rangers are planting tree seeds in their respective localities. A number of the Pinus tuberculata and pinon seeds which are indigenous to this climate and will grow at a high altitude, are being planted at and in the vicinity of La Cumbre peak.

### SANTA CLARA.

**TURNING TO TOMATOES.**—San Jose Mercury: The degree of success attained by tomato growers in the Santa Clara valley in the past two seasons has resulted in preparations for a largely increased acreage this year. While the crop in this valley is not as early as in some sections and does not enable the producers to cater to the early markets, it has the reputation of being very desirable for canning. The Santa Clara tomato is very firm and meaty, has few seeds, is of fine flavor and keeps well. Not only are the local canners largely increasing their pack of tomatoes, but the canners in San Francisco and Alameda counties are heavy purchasers of the Santa Clara vegetable, shipping it to their plants to be canned for market. Large tracts of land are now being plowed and put into condition for tomatoes along Coyote creek, as also along the Alameda road, and in other portions of the county. It is estimated that this county will raise a third more tomatoes this year than in former seasons, providing nothing blights the crop.

### SANTA CRUZ.

**MORE EXTENDED MARKET FOR BERRIES.**—Watsonville Pajaronian: Pajaro valley strawberry growers expect to place their berries in southern California markets throughout the coming summer. The San Francisco market is not large enough to handle all of the berries this valley can produce. The berry growers need a cannery at this point.

### SOLANO.

**PRICES OF CATTLE ADVANCING.**—Republican: Clint Peyton returned Monday from a month's trip in the Middle West States. He was trying to purchase more cattle for W. H. Bryan, but found that prices had been so greatly advanced during the past two months it would be unprofitable to ship them to California. He secured four fine bulls, which arrived here last week with a trainload of Colorado cattle consigned to Lewis Pierce.

**COYOTES NOT READILY CAUGHT.**—A. L. and Oran Brooks have been hunting coyotes on the Miller place, near Susan, and last Saturday a large one was caught in a steel trap which was attached to a log. The animal succeeded in dragging the log some distance before he broke the chain and made his escape. His track was found and he was followed for some days before he was located in some brush north of the Miller place near Tolenas, where he was killed and brought to town.

### SONOMA.

**BIG POTATOES.**—Healdsburg Tribune: William Rowland brought to town Friday two gigantic potatoes taken from ten sacks gathered from his coast ranch, located near Dillon's Beach, not far from Tomales. The potatoes are of the Burbank variety, smooth and symmetrical, with no knots or protuberances. The largest of the tubers weighed two pounds thirteen ounces. The second, not quite so large, was 10½ inches in length. The tubers were members of the twenty-fifth crop raised consecutively on the land.

**SPUDS IN JANUARY.**—Index-Tribune: Many of the mountain ranches on the east side of the valley are seldom, if ever, visited by a frost. Among these farms is that of Jacob Fridger, located almost on the summit of the mountain range that divides Sonoma and Napa counties, and located a few miles east of Glen Ellen. The Fridger ranch has in years past produced all kinds of garden truck for the family table almost all the year around, owing to the mildness of the temperature in that range of mountains. Notwithstanding the severity of the present winter, Mr. Fridger has been cultivating a volunteer potato patch in an open field, and one day this week he dug several sacks of the spuds. They are of the Peerless and Early Rose varieties and vary in size from a hen's egg to a goose egg.

### SUTTER.

**TO ERADICATE THE GOPHERS.**—Sutter County Farmer: On the slough and river lands the gophers have been very destructive this year in the alfalfa fields, and in many places have completely undermined the fields with their burrows and eaten off the roots so that the alfalfa

has been killed out. Poison and traps have been used, but the rodents still increase. B. F. Walton, who has considerable pasture land along the slough, is trying a new plan. He has secured some virus, which if eaten by the gophers, spreads an epidemic among them, the disease killing them off rapidly. This system has been used successfully on squirrels, rabbits, etc., and should do all right on gophers. The virus is mixed with feed and placed in the "runs" similar to the method of poisoning. Some advocate trapping a number of the animals and inoculating them with the virus, then turning them loose to spread the disease. These pests are costing the farmers and orchard men thousands of dollars every season and an epidemic that would eradicate them would be welcomed.

**VALUE OF GRASS.**—Sutter Independent: With high prices for meat, dairy products, etc., and low prices for cereals, does it not look reasonable the farmers should make more profit by turning the grass into money by raising hogs, cows, sheep, etc., rather than exhaust the land by the production of wheat? Green cropping of soil in many kinds of fodder crops tends to renew the land and make it possible to raise several crops to one of cereals. This valley generally is well adapted to the production of the richest kinds of grasses, which cure well and make excellent silage. It's almost a waste to continue to raise grain on land that can be thus utilized for a more profitable crop.

**OIL KEEPS GOPHERS OFF LEVEES.**—Sutter County Farmer: The recent experiments with crude oil on the levees at the Marcuse place, in this county, have proven successful in the way of keeping the gophers from burrowing in the embankment, and more work will be done in this line during the coming year. According to Mr. Burkhardt, the manager of the big ranch there, the idea of applying oil to the levee originated with W. S. Keys, president of the Board of Trustees of the State Mining Bureau, who has had the process patented. The oil is said to prevent the levees from washing away.

### STANISLAUS.

**MONEY FROM SWEET POTATOES AND BEANS.**—Modesto Herald: Sweet potatoes are commanding from \$1.25 to \$1.50 per hundred pounds for the producers nowadays and will very likely go higher. Growers have done well this season, the lowest price having been 60 cents on board cars. The Turlock district crop, abridged by reason of the break in the canal system towards the close of the growing season, perhaps aggregated twenty-five cars of an average of 30,000 pounds to the car. Andy Stiefvater handled quite a percentage of the crop and reports that the dealers hold the potatoes in high favor and will bid freely for next season's crop. B. Weil & Son handled a total of about 30,000 pounds of Pink beans from Turlock district, and Andy Stiefvater handled 15,000 pounds. Of course, these figures do not represent the total production, although only a limited acreage was planted, yet at 2 and 2½ cents a pound, the prices paid the growers, considerable money is represented. The yield was very good, the experiment so encouraging, everything considered, that this year the acreage devoted to these beans will be largely augmented.

### TEHAMA.

**BIG DEAL IN REAL ESTATE.**—Red Bluff People's Cause: One of the largest and most important land transfers that has lately taken place here was put on record recently at the county clerk's office. The transfer embraces several large tracts of land situated in Tehama, Butte and Plumas counties, aggregating 40,000 acres. The consideration named in the deed is the nominal one of \$10. The Diamond Match Co. is the purchaser—one of the large trusts of the United States—organized under the laws of Illinois with a capital of \$11,000,000. The land was purchased for the timber, to be used in the manufacture of matches.

### TULARE.

**SPRAYING BEGUN.**—Register: Horticultural Commissioner Fowler states that there will be more orchard spraying done this season in this vicinity than ever before. There seems to be a concert of action toward thoroughly cleansing the trees. Quite a number of orchardists have already begun spraying, and others will get to work at it as fast as they finish pruning. Mr. Fowler furthermore stated that he had never seen a better prospect for a full fruit crop than the trees now show.

### YOLO.

**HOGS ARE GOLD.**—Woodland Mail: Jeff Clanton can demonstrate that it pays to raise hogs. He recently killed four hogs, eight months old, that netted him 950 pounds of meat, which, at 8 cents per pound, would be worth \$76. These hogs

cost him \$42 for feed, etc., leaving a profit of \$34. This ought to demonstrate that it pays to raise hogs.

### YUBA.

**BIG SHEEP DEAL.**—Wheatland Four Corners: D. I. Waltz of Chico recently returned from Montana, where he had been looking into the stock business. While there he consummated a deal whereby he became the possessor of a band of sheep, numbering 10,300, together with about sixty head of cattle and 400 tons of hay for winter feed. The price paid for the band was \$9 for the ewes and \$2.50 for the lambs. The sale was made by L. E. Thomas, son of T. H. Thomas of this place, and Tom Haw, an Americanized Chinaman, who were in partnership, and they received in the neighborhood of \$35,000 for their interests.

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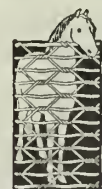
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## THE HOME CIRCLE.

## Life's Loom.

Weaving, weaving, weaving,  
Time is the warp,  
Pulsing and throbbing, life's loom goes;  
Spinning, spinning, spinning.  
Man's deeds the woof.  
Quickly and busily the shuttle he throws.

The little child takes up the task,  
As soon as consciousness begins,  
His tiny hands uncertain act,  
As merrily he heedless spins.

The youth, with pride and confidence,  
Loud vaunts the deeds he will achieve.  
The future, big with great events,  
In blazing light his name will weave.

Hard pressed, beset, the man toils on,  
Speed by the days, the months, the years,  
Aghast and desperate he stands,  
So small his greatest work appears.

With palsied hand, old age has come,  
Slow goes the loom—Fate cuts the thread;  
Wide yawns the grave; the web is spun,  
A shroud is woven for the dead.

'T is thus through life; man spins and weaves,  
Until of time and deeds complete  
This mystic robe, his very self,  
Becomes for him his winding-sheet.

Weaving, weaving, weaving,  
Time is the warp,  
Pulsing and throbbing, life's loom goes;  
Spinning, spinning, spinning,  
Man's deeds the woof,  
Ever and ever the shuttle he throws.  
—Harper's Weekly.

## A Queer Blunder.

The morning sun brightened the gilt letters on the sign above the entrance to the staunch old warehouse, but its radiance was lost on the young man with keen, gray eyes, who stood at the office door and hesitated before he turned the knob. In that brief moment he tried to recall the directions that Emily Quarles had given him.

"Father is peculiar," she had said. "You must know him before you can appreciate him." And Spencer Grant wondered how long it would be before this appreciative stage could be reached. He hadn't met this peculiar father, and here he was standing on the doormat of his office mustering up courage to go in and ask him for his daughter.

What else had Emily said? "Do not contradict father. Do just what he tells you to do. Let him have his own way. If he blusters and fumes, wait quietly; he will soon cool down. Father's gruff manner is largely assumed. If you have tact, you will discover the way to handle him. Tell him truthfully, if you have a chance, how we met at Aunt Stanhope's, and that as soon as we were quite assured that we were all in all to each other, which, you must add, came to both of us as a complete surprise, I sent you directly to him. I will prepare him as far as I think judicious for your coming. Keep up a stout heart and guard your temper."

Spencer turned the knob and went in. There were several clerks writing in the outer office, but they did not look up as he passed along the narrow space before the high railing to the door marked "private." He knocked at this door, and a gruff voice bade him come in. Spencer summed up all his resolutions and entered.

A sharp-featured old man, with heavy eyebrows, was seated at a desk, with his bushy gray head bent above a handful of papers.

"Sit down," he said, without looking up.

Spencer obeyed, and after a little the old man raised his head, glanced at the clock, and then gave the young man a long, searching glance. As he did so he drew a letter toward him and glanced at a page of it. Again he stared at Spencer.

"Well," he said abruptly "you are exactly on time. You were to be here precisely at 10. This argues well for your early training. You have made

a good impression on me to start with."

Spencer murmured his pleasure at this favorable comment, but the old man interrupted him.

"Your father says here that you resemble him. He writes that the resemblance is so strong that I couldn't help but know who you were if I chanced to meet you anywhere. I don't agree with him, though there is a family resemblance. You are much better looking than he ever dreamed of being."

"Did my father say that?" inquired Spencer hastily. He knew the thing was quite impossible. Emily's father was laboring under some queer delusion. But he didn't mean to contradict him.

"Yes, he did," chuckled the old man, with a grim smile. "Fathers with but one child are apt to be asses." Then his tone changed. "What can you do? Can you write shorthand? Do you understand typewriting? Can you compose a good letter? Can you spell?"

"I think," said Spencer quietly, "that I can best answer that by saying that I have a pretty thorough business training that was picked up in four years of practical work. I've been hard at it, in fact, ever since I left college."

"Your father doesn't make any such claim," said the old man, referring again to the letter. "All he says is 'Try him.' I will; I've made a place for you. I am going to indulge in the luxury of a private secretary. Ha, ha, ha! Here, take these letters; see what answers they need. Answer 'em. That's your little side room there. Leave the door open—I may want to call you."

Spencer smilingly took the papers and, without a trace of hesitation, went into the little room assigned him. He found the conveniences he needed, and, with his amused smile deepening, he went at his task.

Presently he heard the outer door of the office open and shut, and a moment later the following dialogue came to him through the half-closed door:

"So you have come," growled the old man.

"Yes, sir," said a mild voice with a little quaver in it.

"Well," said the old man with a dangerous rising inflection, "I want to tell you that it can never be!"

"Do you mean that I won't do?" inquired the mild voice.

"That's just what I mean," snarled the old man. "Your comprehension does you credit."

"But how can you tell till you've tried me?" protested the mild voice.

"Tried you!" roared the old man.

"What do you mean by that?"

"I mean, sir," said the mild voice hurriedly, "that I hardly think it's fair to condemn me unheard and untried. I was led to think you would show me more consideration."

"Oh, you were, were you?" snapped the old man. "Well sir, you have been falsely led. I know my daughter much better than you do, sir!"

"Your daughter, sir?"

"Yes, my daughter! And don't you dare to mention her name!"

"I—I had no intention of doing so, sir."

"Eh! Coming to your senses, are you? That's right. She's only a foolish, headstrong girl; in a month she'll forget your existence."

"But I don't see what your daughter has to do with it. She is nothing to me, sir."

"Spoken like a sensible youth. I thought I'd convince you. There, there, let the whole thing drop."

"And you positively refuse to give me a trial?"

"Confound you, there you go again. Do you take me for an idiot?"

"I—I wouldn't go as far as that, sir. You don't seem to understand that I was led to believe you would give me an opportunity to show my worth. I am greatly disappointed, sir."

"Heavens, man, are we going over all that again?"

"Try me for a month, sir."

"Not for a minute!"

"For a week."

"Leave the room, sir! Go, sir! Go to the idiot asylum and marry somebody in your own mental class."

"I am going, sir. My father will be greatly surprised at your unreasonable treatment."

"Your father! Who cares for your father? Why doesn't he keep his weak-minded children at home?"

"Good day, sir."

The door closed with a sharp bang, and there was a brief silence.

"I wonder what the deuce he meant by saying he'd tell his father?" Spencer heard the old man mutter. "Who's his father? Well, whoever he is, his son shall never marry my daughter. What in the world could she have seen in such an unbalanced fellow?"

His heavy step sounded on the floor, and when Spencer looked up the old man was gazing down at him from the doorway. His face was very red and his white hair still bristled with indignation.

"Well, Mr. Secretary," he said, "how are we coming on?"

"Very well, sir," replied Spencer. "I'll lay these replies upon your desk in a few moments."

"Good," said the old man.

"By the way," said Spencer, "what do you want to say to Van Annam & Co.? They make an offer for your stock of cochineal, you know."

"Accept it and tell them we'll ship the stuff to-morrow."

"I wouldn't do that," said the secretary.

"Eh?" cried the astonished old man.

"You don't seem to know that there is a corner forming in dyestuffs," said Spencer, with a slight smile. "Wait a minute, and I will telephone for the latest quotations."

He arose as he spoke and stepped into the outer office and entered the telephone box.

"It is just as I supposed," he said, as he rejoined the old man. "Cochineal jumped 34 per cent at the opening of the market this morning."

The old man turned and went back to his desk without a word. A moment later he looked in again.

"That means \$2735 to the good," he said. "Guess you'll earn your salary all right." Then he slowly added, "And I guess I'm getting old."

The sound of an opening door drew his attention. A radiant vision appeared in the doorway. It was Emily.

"Well, papa?" she cried, as she stepped forward.

The old man's lips tightened. "I sent him packing," he said rapidly. "A most reprehensible young fellow. You didn't know him, my dear."

Before she could indignantly reply an astonishing apparition appeared in the doorway of the inner room. It was Spencer—it was Spencer bare-headed, with a pen in one hand and a bundle of letters in the other. As he caught her eye he put his finger to his lips, shook his head at her over the old man's shoulder, and drew back.

"Oh father!" was all Emily could say.

"Don't feel bad, my child," said the old man, with a little tenderness in his tone. "You'll soon forget him." He lowered his voice. "I've got a young fellow inside there"—he jerked his thumb toward the inner door—"who is just the man for you. Smart, splendid family, good looking, bright as a new dollar. Saved me \$2735 this very morning! Hadn't been at work twenty minutes. Wait a little, and I'll introduce him."

"Let me have a look at him!" cried Emily, as she darted to the door.

"Good morning," she said to Spencer.

"Good morning," answered that smiling youth, with an eloquent grimace.

Emily turned to her astonished parent.

"He'll do," she said. "Come out sir," and they came forward hand in hand.

"Bless my soul!" cried the paralyzed father.

"You are quite right, papa," said Emily. "He is just the man for me."

In fact, I've thought so for some time, and yet I don't believe you really know who he is. You are getting reckless, daddy. Tell him who you are, Spencer."

"I am Spencer Grant, of Spencer Grant & Co., importers of dyestuffs and druggists supplies, and entirely at Mr. Richard Quarles' service."

"Spencer Grant & Co.!" gasped the old man, as a look of horror came over his face. "Then who was the other fellow?"

"I'm afraid," said Spencer gently, "that it was the highly recommended son of your old friend."

"Awful!" groaned the old man. "I was right when I said fathers with one child are asses. How can I explain?"

"Suppose you leave the explanation to your new secretary?" said Emily.

"Let me suggest," said Spencer, with a happy smile, "that you leave it to the junior member of the new firm of Quarles & Grant."

And then the grim old man chuckled. —Cleveland Plain Dealer.

## Pearls of Thought.

Little love, little trust; but a great love brings a great confidence.—Robert Leighton.

At the bottom of a good deal of bravery that appears in the world there lurks a miserable cowardice. Men will face powder and steel because they can not face public opinion.—E. H. Chapin.

The only real relief is in absolute conquest; and the earlier the battle begins the easier and shorter it will be. If one can keep irritability under, one may escape a struggle to the death with passion.

Not till we are ready to throw our very life's love into the troublesome little things can we be really faithful in that which is least and faithful also in much. Every day that dawns brings something to do, which can never be done as well again.—James Reed.

Do what you can, give what you have. Only stop not with feelings; carry your charity into deeds; do and give what costs you something.—J. H. Thom.

Finish every day and be done with it. You have done what you could. Some blunders and absurdities, no doubt, crept in; forget them as soon as you can. To-morrow is a new day; begin it well and serenely and with too high a spirit to be cumbered with your old nonsense. This day is all that is good and fair. It is too dear, with its hopes and invitations, to waste a moment on the yesterdays.—Ralph Waldo Emerson.

## Cooked Celery for Rheumatism.

One of the latest is that celery is a cure for rheumatism; indeed, it is asserted that the disease is impossible if the vegetable be cooked and freely eaten. The celery should be cut into pieces, and boiled in water until soft, and the water drunk by the patient. Put new milk, with a little flour and nutmeg, into a saucepan with the boiled celery, serve it warm with pieces of toast, eat it with potatoes, and the painful element will soon yield. Such is the declaration of a physician who has again and again tried the experiment, and with uniform success. He adds that cold or damp never produces, but simply develops the disease, of which acid blood is the primary and sustaining cause, and that while the blood is alkaline there can be neither rheumatism nor gout.—Science News.

## What Overwork Means.

Professor Huxley gave his opinion in 1893 that what is called overwork means, in a large proportion of cases, under-oxygenation, and consequent accumulation of waste matter, which operates as a poison. Sir J. Sawyer Birmingham, in corroboration of this opinion, urges that much chronic invalidism is chronic suboxidation, and one of the worst of wrong conditions is work in stale air. Whenever we doubt about our vitality, we should doubt about our ventilation. Dr. Cheadle re-



minds us that one-third of our lives are spent in bedrooms, of which the air is poisoned beyond what would be tolerated in a sitting-room. It is well conceded that many of the cases of nervous disease, and especially the various forms of neurasthenia, depend largely upon want of open-air exercise.—Medical Record.

#### Life.

Life is a tinsled show, this earth the ring,  
Our vast uplifted tent the azure sky;  
Time, the ringmaster, marks us with his eye,  
Unfurls his lash and lets us feel its sting.  
Wealth is the carpet the attendants bring  
To ease our bones; we leap and hear the cry  
Of quick approval; then with courage high  
We dance a measure, draw the bow, or sing.  
We mount our hobbies, and we have our falls,  
We pierce the papered hoops of pleasure through;  
The light and music of the scene enralls,  
We love our flimsy skirts of pink and blue.  
Yet when the monitor insistent calls  
We make our exit through the canvas walls.  
—Isabel Ritchie.

### DOMESTIC ECONOMY.

#### Domestic Hints.

**CHICKEN TARTS.**—Chop cold chicken very fine and season to taste. Boil an onion and one quart of milk; when it is scalding hot take out the onion and thicken with a teaspoonful of flour; with cold milk. When it has boiled add two cups of chopped chicken. Serve in patty cases.

**CREAMED CALF'S BRAINS.**—Parboil the brains, blanch and cut into small pieces. Cook together one tablespoon flour, one tablespoon butter, one teaspoon salt and one-half pint milk. When the sauce is smooth put in the brains and cook three minutes. Remove to back part of fire and beat in one egg. Serve at once on buttered toast.

**CHARLOTTE JELLY.**—Soak one-half box gelatine in one-half pint of cold water one hour. Add one pint boiling water and one and one-half cups sugar with juice of one or more lemons. Bring it to a boil and strain in moulds to form. Cut off the tops of six Charlottes, and when the jelly is ready to serve turn it out on a dish and garnish with the Charlotte Russe tops.

**CREAMED ONIONS.**—Ingredients for preparing: One dozen medium-sized onions, one cupful of milk, one tablespoonful of butter, pepper and salt to taste, and enough flour to thicken the milk. Remove the skins from the onions, wash them, and put them in salted water that is boiling rapidly. Let them cook until they can be pierced readily with a fork. This will require about three-quarters of an hour. Drain off the water and pour over the onions the following sauce: Melt the butter in a saucepan or double boiler, stir about a tablespoonful of flour into a little of the milk, and when this is smooth add it to the melted butter, stir for a minute, then add the remainder of the milk, and salt and pepper to taste. If it is not sufficiently thick, add a little more flour that has been previously rubbed smooth in milk. When the sauce comes to a boil it is finished. In seasoning this or other white sauces where pepper is required, it is better to use the variety known as white pepper, or the particles may show in the sauce.

**LOBSTER SALAD.**—Ingredients: One medium-sized boiled lobster, two heads of celery, one head of lettuce, three yolks of eggs, one pint of oil, paprika, salt, pepper, lemon and vinegar to flavor, one hard-boiled egg to decorate. Break the lobster claws and split the body to remove the meat, which should be cut into small dice. Split the stalks of celery and cut these up. Then mix the whole with mayonnaise made as follows: Put the three yolks in a bowl with the salt and beat thoroughly, but evenly, with an egg beater. After beating for two minutes begin to add the oil, a few drops at a time, continuing the even beating until the mixture

thickens, when the vinegar may be added slowly. The amount of vinegar to be used depends on the taste of the family, and the majority of people consider a salad spoiled if the dressing is too acid. Continue adding the oil until the entire quantity is taken up, putting in an occasional drop of vinegar to keep the oil from separating. When half the oil has been used season with paprika and lemon juice to taste. Many persons like one or two drops of onion juice in the dressing. After mixing enough dressing with the lobster to make it moist, place the individual portions on leaves of lettuce, pour mayonnaise over each, and decorate with slices of hard-boiled egg.

#### Hints to Housekeepers.

To preserve cut flowers, besides giving them fresh water each day, cut off the ends of the stems daily, at right angles to the stalk.

Violets covered with paraffine paper each night and set in a cool place will keep much longer.

Be sure to mend all delicate fabrics, such as laces, before, instead of after, washing.

Cracks in a cooking stove can be satisfactorily filled by a paste made of six parts common wood ashes to one part table salt, mixed with cold water. Properly mixed, it will prove lasting and will take blacking.

Snaps are made by rubbing half a pound of butter into two pounds of flour. Then add half a pound of brown sugar, a level tablespoonful of ground ginger. Pour in, mixing all the while, one pint of New Orleans molasses. The dough must be moist, not wet. Take it out on the board, knead until it becomes elastic, roll very thin, cut with a small round cutter and bake in a moderate oven until a light brown. The dough may be cut into small fancy shapes, in which form they please children very much.

Absolute cleanliness and tidiness are necessary in a sickroom; the furniture should be simple and capable of being easily cleansed. Avoid all kinds of woolen draperies, and let the curtains be of white washable material. If possible, all medicines and the attendant paraphernalia should be kept out of sight of the patient in an adjoining room. Glasses, spoons, etc., should be washed as soon as used and placed ready for the time when they will again be needed.

A physician gives the following hints regarding proper sleeping rooms for the children: The sunniest and best room in the house is not too good for the child. The apartment should be ventilated during the night as well as during the day. A sick child should never occupy an inside room. Fresh air is a prime necessity. Gas stoves consume the air required by the child and are not advisable in a sleeping room. No sweeping should be done while the children are in the room. If, however, because of sickness, this is necessary, dust the furniture and floor with a moist cloth and use a carpet sweeper instead of a broom.

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## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, Feb. 5, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July
Wednesday.....	78 3/4 @ 79	78 @ 78 3/4
Thursday.....	79 1/4 @ 78 3/4	79 1/4 @ 78 3/4
Friday.....	78 3/4 @ 77 3/4	78 3/4 @ 77 3/4
Saturday.....	77 3/4 @ 78 1/4	77 3/4 @ 78 1/4
Monday.....	78 @ 78 3/4	78 @ 78 3/4
Tuesday.....	78 3/4 @ 78	78 3/4 @ 78 3/4

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday.....	42 1/4 @ 44 1/4	37 1/4 @ 38 1/4
Thursday.....	45 @ 44 1/4	39 1/4 @ 38 3/4
Friday.....	44 1/4 @ 44 1/4	38 3/4 @ 38 3/4
Saturday.....	43 3/4 @ 44 1/4	37 3/4 @ 38 1/4
Monday.....	44 1/4 @ 44 1/4	38 3/4 @ 38 3/4
Tuesday.....	44 1/4 @ 44 1/4	39 @ 38 3/4

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Wednesday.....	1 08 1/2 @ 1 08 3/4	1 09 1/2 @ —
Friday.....	1 09 1/2 @ 1 08 3/4	1 09 1/2 @ 1 09 1/2
Saturday.....	1 08 1/2 @ 1 08 3/4	1 09 @ 1 09 1/2
Monday.....	1 09 @ 1 08 3/4	— @ —
Tuesday.....	1 08 1/2 @ 1 08 3/4	1 09 1/2 @ 1 09 1/2
Wednesday.....	1 08 @ 1 08 3/4	1 08 1/2 @ 1 09

## WHEAT.

The local wheat market has not shown much activity since last review given in these columns, nor has there been any appreciable improvement developed in prices obtainable. Holders were in most instances unwilling to let go at current figures, believing that any changes later on are more apt to be to firmer than to easier prices. This view of affairs is certainly warranted, but at the same time the prospects for any pronounced advances in wheat values in the very near future are not at the moment particularly encouraging. Australia is reported to be selling rather freely, being now at the close of her harvest, and this naturally operates against Pacific coast wheat in the European market, but it is not likely that Australia is going to crowd much wheat to sale at low figures, and if success is attended the efforts to permanently establish lower ocean freight rates from here than have been prevailing, wheat will be likely to receive considerable benefit on that score. There is not much doing at present in the chartering of grain ships, bids and asking rates being too far apart. For iron ships, usual voyage to Europe, 27s 6d per ton is bid, while owners of desirable carriers are asking 32s 6d. The latest spot charter reported was at 28s 9d. In January, 17 cargoes of wheat, aggregating 55,000 tons, were sent afloat from this port. Exports of wheat from San Francisco for the season to date are about 280,000 tons, as against 220,000 tons for corresponding period last year.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	6s 3 1/4 @ 6s 4	6s 3 1/4 @ 6s 3 1/4
Freight rates.....	37 1/4 @ 38 1/4	28 1/4 @ —
Local market.....	98 3/4 @ 1 01 1/4	1 07 1/4 @ 1 08 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.09 1/2 @ 1.08 1/2.
December, 1902, delivery, \$1.09 1/2 @ 1.08 1/2.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.08 1/2 @ 1.09; May, 1902, \$1.08 @ 1.08 1/2.

## LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on Feb. 1st and Jan. 1st:

Tons—	Feb. 1st.	Jan. 1st.
Wheat.....	*115,991	113,128
Barley.....	†35,105	39,374
Oats.....	8,390	8,207
Corn.....	663	573

\*Including 74,836 tons at Port Costa, 40,288 tons at Stockton.

†Including 25,321 tons at Port Costa, 7,718 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show an increase of 2,863 tons for the month of January. A year ago there were 148,556 tons wheat in Call Board warehouses.

## FLOUR.

There is a very fair export movement, mainly of special brands contracted for ahead, but with this exception the market is quiet. Spot stocks and offerings cannot be termed especially heavy, but there is more on hand than can be accommodated with immediate custom at full current figures. Only on most favorite brands are prevailing values being well sustained. A cargo of 19,325 barrels was cleared Monday for the United Kingdom.

Superfine, lower grades.....	22 40 @ 25 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

## BARLEY.

Shipments are still being made outward by sea, both to Europe and the Atlantic States, but the movement is not as heavy as earlier in the season, the grain not being obtainable in as large quantities and on as favorable terms as during the Summer and Autumn. Some barley is being forwarded outward by rail, mainly to points this side of the Missouri river. While the market for brewing and export grades is moderately firm, feed descriptions continue, as for some weeks past, to command relatively the best figures. Values are on a low plane, however, as compared with prices ruling for other feed cereals.

Feed, No. 1 to choice.....	88 1/2 @ 91 1/4
Feed, fair to good.....	87 1/2 @ 90
Brewing, No. 1 to choice.....	92 1/4 @ 95
Chevalier, No. 1 to choice.....	1 00 @ 1 10
Chevalier, poor to fair.....	8 1/2 @ 9 5

## OATS.

No great activity to report in the market for this cereal, but the quiet state of trade is more due to limited offerings and stiff asking figures than to lack of inquiry. Stocks in this center are not heavy and are largely in second hands. Prospects are that there will be no material weakening in values during the balance of the season.

White Oats, fancy feed.....	1 40 @ 1 42 1/4
White, good to choice.....	1 32 1/4 @ 1 40
White, poor to fair.....	1 25 @ 1 30
Gray, common to choice.....	1 30 @ 1 40
Milling.....	1 37 1/4 @ 1 42 1/4
Surprise, good to choice.....	1 40 @ 1 45
Black Russian.....	1 12 1/4 @ 1 30
Red.....	1 22 1/4 @ 1 40

## CORN.

Market shows much the same condition as last noted, spot stocks being of moderate volume and are in the main firmly held, especially choice to select qualities. The demand is not very brisk at full current figures, but all things considered, trade is of quite fair proportions.

Large White, good to choice.....	1 35 @ 1 40
Large Yellow.....	1 35 @ 1 45
Small Yellow.....	1 50 @ 1 60

## RYE.

Values remain quotably as last noted, but buyers are not taking hold freely at full figures.

Good to choice.....	85 @ 90
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## BUCKWHEAT.

Only a very limited demand for this cereal. It would have to be an exceptionally fine lot which would readily command top quotation in a regular wholesale way.

Good to choice.....	1 55 @ 1 70
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## BEANS.

The market is ruling quiet, with offerings only moderate, but more than ample for the immediate demand, asking figures being above the views of speculative operators and above the parity of values at present ruling in Eastern centers. Local requirements for immediate use do not naturally draw very heavily on supplies. It is probable that if many beans are secured here for shipment during the coming spring and summer, higher prices will have to be paid than are now obtainable on shipping orders, but the future of the market will be governed to a great extent by the developments as the season advances of the prospects for coming crop.

Pea, fair to good, 100 lbs.....	3 50 @ 4 00
Small White, good to choice.....	3 00 @ 3 25
Lady Washington.....	2 80 @ 3 10
Pinks.....	1 80 @ 2 10
Bayos, good to choice.....	2 40 @ 2 60
Reds.....	2 50 @ 3 00
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	4 50 @ 4 60
Black-eye Beans.....	3 50 @ 3 65
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

## DRIED PEAS.

There is no movement of consequence in dried peas, either Green or Niles. Values are without quotable change, but are largely nominal for the time being, in the absence of any noteworthy transfers.

Green Peas, California.....	1 50 @ 2 00
Niles Peas.....	1 75 @ 1 80

## WOOL.

Business in this line is at present of in-

significant proportions, owing to scarcity of supplies, desirable grease wools being practically out of stock. There is in fact little wool of any sort now on the market. Inactivity must necessarily be a feature of the wool trade until Spring clip begins to put in an appearance, which will be about the middle of the coming month. Quotations are based on latest transactions.

SPRING.	
Southern, defective, 7 mos.....	7 @ 8
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	10 @ 12

FALL.	
Humboldt and Mendocino.....	11 @ 12
Northern Mountain, fine.....	9 @ 10
Northern Mountain defective.....	8 @ 9
Middle Counties.....	8 @ 10
San Joaquin and Plains.....	6 1/4 @ 8 1/4
San Joaquin Lambs.....	7 1/4 @ 9

## HOPS.

Not many hops are now being offered in a wholesale way from any quarter. The market appears quite firm, especially for choice to select, but 12 1/2c is the very utmost warranted at this date as a wholesale quotation in this center on offerings from first hands. Higher figures quoted are more in accord with the views of sellers and speculative holders than with the bids of wholesale operators. Dealers now have nearly all the hops under control and are endeavoring to boom the market. There are still, however, some good Russian River hops offering here from first hands on which it has been impossible thus far to get a firm offer of over 11 1/2c wholesale from any shipper or dealer. For one round lot of about 200 bales of Mendocinos 11 1/2c was accepted the current week. "A Subscriber" writes from Sacramento that our hop quotations have been lately incorrect, in other words, too low. Based on prices obtainable in a wholesale way in San Francisco, they have been fully as high as were warranted by the facts. Recent sales of Oregon hops and of Sonoma county hops have been reported at 12 1/2c, but these sales were not effected here. Oregon hops are now given the preference abroad over any other hops on this coast, and next to Oregon, Sonoma hops take the lead. Even if these hops had been sold in San Francisco, the figure realized would not have been justified as a regular quotation, unless specified as being for Oregon and Sonoma hops. For months past hops have been quoted by some publications up to 15 @ 16c, and in this time most of the hops secured from growers in this State were bought, as can be readily substantiated, within range of 10 @ 11c.

Fair to choice, 1901 crop.....	10 @ 12 1/2
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## HAY AND STRAW.

The advanced figures last quoted for hay continue to be maintained, but the general tone of the market was hardly so firm as it was a week ago, owing to weather conditions existing in the meantime. Present prices are not netting the average producer very big returns, and it would not be surprising if current values were maintained, even though crop prospects in the near future should prove more favorable.

Wheat, good to choice.....	10 00 @ 14 00
Wheat and Oat.....	10 00 @ 13 00
Tame Oat.....	8 50 @ 11 00
Wild Oat.....	8 00 @ 10 50
Barley.....	8 00 @ 10 50
Alfalfa.....	9 00 @ 10 50
Clover.....	7 00 @ 8 50
Compressed.....	10 00 @ 14 00
Straw, 1/2 bale.....	45 @ 60

## MILLSTUFFS.

No material changes have been effected in quotable values or the general condition of the market for mill offal since date of last report. Supplies of Bran and Middlings continue of light volume. Current values on Rolled Barley and Milled Corn are being well sustained.

Bran, 1/2 ton.....	18 50 @ 19 50
Middlings.....	21 00 @ 22 00
Shorts, Oregon.....	19 00 @ 20 00
Barley, Rolled.....	19 00 @ 20 00
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

## SEEDS.

Mustard Seed is quotably unchanged, but market is very quiet, present stocks and offerings being too light to admit of much activity. Alfalfa Seed is offering in moderate quantity, the supply proving more than sufficient to accommodate the limited demand which has thus far developed this season.

Alfalfa, Cal.....	7 25 @ 7 50
Alfalfa, Utah.....	8 25 @ 8 75
Flax.....	2 40 @ 2 60
Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 85 @ 3 00

Canary.....	3 1/4 @ 3 1/4
Rape.....	1 1/4 @ 2 1/4
Hemp.....	3 1/4 @ 3 1/4

## BAGS AND BAGGING.

Asking figures for future deliveries of

Grain Bags remain as last quoted, but buyers are not taking hold at present to any noteworthy extent. Wool Sacks are being steadily held, with prospects of a fair inquiry for the same in the near future.

Calcutta Grain Bags, buyer June-July.....	6 @ 6 1/4
Calcutta Grain Bags, spot.....	6 1/4 @ —
San Francisco Grain Bags, 22x36, spot.....	— @ —
Wool Sacks, 4 lbs.....	31 @ 38
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	8 1/4 @ —
Gunnies.....	— @ —
Bean Bags.....	5 1/4 @ 5 1/4
Fruit Sacks, cotton, three sizes.....	6 1/4, 6, 6 1/4
Fruit Sacks, Jute.....	7 @ 7 1/4

## HIDES, PELTS AND TALLOW.

The market for Hides and Pelts cannot be termed firm, values being relatively higher than now current in Eastern centers. Tallow continues in active demand and is meeting with a firm market.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @ —	9 1/4 @ —
Medium Steers, 48 to 56 lbs.....	10 @ —	8 1/4 @ —
Light Steers, under 48 lbs.....	9 @ —	8 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ 9 1/4	8 1/4 @ —
Light Cow Hides, under 50 lbs.....	9 @ —	8 @ —
Stags.....	6 @ 7	— @ —
Wet Salted Kip.....	9 @ 9 1/4	8 @ —
Wet Salted Veal.....	9 @ 9 1/4	8 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ 16 1/4	14 @ —
Dry Kip and Veal, 11 to 16 lbs.....	14 @ —	12 @ —
Dry Calf, under 4 lbs.....	19 @ —	16 @ —
Salted Horse Hides, large.....	2 75 @ —	— @ —
Salted Horse Hides, medium.....	2 25 @ —	— @ —
Salted Horse Hides, small.....	1 50 @ —	— @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, small.....	1 25 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 1/2 skin.....	75 @ 1 00	— @ —
Pelts, medium, 1/2 skin.....	50 @ 70	— @ —
Pelts, short wool, 1/2 skin.....	30 @ 40	— @ —
Pelts, shearing, 1/2 skin.....	15 @ 30	— @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good medium.....	— @ 30	— @ —
Deer Skins, thin winter.....	— @ 20	— @ —
Elk Hides.....	10 @ 12	— @ —
Tallow, good quality.....	5 1/4 @ —	— @ —
Tallow, No. 2.....	4 1/4 @ —	— @ —
Goat Skins, perfect.....	30 @ 37 1/4	— @ —
Goat Skins, small.....	10 @ 20	— @ —
Kid Skins.....	5 @ 10	— @ —

## HONEY.

There is not much offering in this center from either first or second hands. The market is firm at the quotations, although business is of a light order. To purchase freely, higher prices than are warranted as quotations would very likely have to be paid.

Extracted, White Liquid.....	5 1/4 @ 6
Extracted, Light Amber.....	4 1/4 @ 5
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	11 @ 12 1/4
Amber Comb.....	8 @ 10
Dark Comb.....	6 @ 7

## BEESWAX.

Stocks are of slim proportions, both here and in the interior. Values are being well maintained, and this is likely to be the case during the balance of the season.

Good to choice, light, 1/2 lb.....	25 @ 28
Dark.....	24 @ 25

## LIVE STOCK AND MEATS.

Prices for Beef have been quite well maintained the current week, although offerings were ample for the demand, trade not being particularly brisk. Mutton was in moderate receipt and good request, prices ruling rather firm. Veal and Lamb arrived sparingly, and market for choice inclined against buyers. Hogs were in sufficiently heavy receipt to prevent any material advance in prices, but the tendency was to firmer figures.

Beef, first quality, dressed, net 1/2 lb.....	7 @ 7 1/4
Beef, second quality.....	7 @ —
Beef, third quality.....	6 @ 6 1/4
Mutton—ewes, 7 @ 7 1/4 c; wethers.....	7 1/4 @ 8
Hogs, bard grain fed, 125 to 200 lbs.....	6 @ —
Hogs, small, fat.....	6 @ —
Hogs, large, bard, over 200 lbs.....	5 1/2 @ —
Hogs, soft or corn fed.....	5 @ —
Hogs, country dressed.....	6 1/4 @ 7
Veal, small, 1/2 lb.....	8 @ 9 1/4
Veal, large, 1/2 lb.....	8 @ 8 1/4
Lamb, spring, 1/2 lb.....	11 @ —

## POULTRY.

Not much California poultry was received, but there were fairly liberal arrivals of Eastern, and only for choice young stock or very select old did the market display any special firmness. Inquiry was most pronounced for Broilers and Fryers in prime to choice condition, these bringing relatively the best figures. Fine Young Roosters, fat Goslings and choice Young Ducks sold to very fair advantage. Last quoted advance on Young Pigeons continued to be maintained, they being scarce and in good request. Old Pigeons were lower.

Turkeys, dressed, choice.....	16 @ 18
Turkeys, alive, Hens, 1/2 lb.....	14 @ 15
Turkeys, alive, Gobblers, 1/2 lb.....	13 @ 14
Hens, California, 1/2 dozen.....	4 50 @ 5 50



Roosters, old.....	4 50	@5 00
Roosters, young (full-grown).....	5 01	@6 00
Fryers.....	4 50	@5 00
Broilers, large.....	4 00	@5 00
Broilers, small to medium.....	3 00	@4 00
Ducks, old, per dozen.....	5 00	@5 50
Ducks, young, per dozen.....	6 00	@7 00
Geese, per pair.....	1 50	@1 75
Goats, per pair.....	2 00	@2 25
Pigeons, old, per dozen.....	1 25	@—
Pigeons, young.....	2 50	@2 75

**BUTTER.**

There has been further hardening in values the past week, with arrivals rather light for this time of year and the demand better than ordinarily experienced in February, owing to the fact that there is very little held or packed butter now on the market. Sales have been made in a small way above the quotations.

Creamery, extras, per lb.....	27	@28
Creamery, firsts.....	25	@26
Creamery, seconds.....	—	@—
Dairy, select.....	26	@—
Dairy, firsts.....	23	@25
Dairy, seconds.....	17	@—
Mixed store.....	13	@14
Creamery in tubs.....	—	@—
Pickled Roll, per lb.....	—	@—
Firkin, California, choice to select.....	—	@—
Firkin, common to fair.....	—	@—

**CHEESE.**

Market is tolerably well stocked with old cheese and common qualities of new, and for these descriptions is lacking in firmness. Choice to select mild-flavored new is not plentiful, and for favorite marks higher prices than are quotable are being realized in a jobbing way.

California, fancy flat, new.....	11 1/4	@12
California, good to choice.....	10 1/4	@11 1/4
California, fair to good.....	10	@10 1/4
California, "Young Americas".....	10	@12 1/4

**EGGS.**

The shipping demand, in connection with the increased inquiry on local account, was sufficient to cause some reaction in the market the past week, values recovering about 2c. Sales of selected white were made up to 24c, but not in a way to warrant the figures as a quotation. It was the exception, however, where store-gathered eggs went at less than 21c, the present range in values being decidedly narrow.

California, select, large, white and fresh.....	22 1/4	@—
California, select, irregular color & size.....	21	@—
California, good to choice store.....	20	@—
California, common to fair store.....	—	@—
Eastern, good to choice.....	—	@—
Cold Storage.....	—	@—

**VEGETABLES.**

Fresh vegetables of all descriptions were in light receipt and choice qualities brought, as a rule, good prices, quotable values remaining close to the figures of preceding week. String Beans and Green Peas arrived more sparingly than immediately prior to last review. That supplies will show very material increase for a fortnight or more is not probable. Onion market is showing more firmness for choice to select, a considerable proportion of present offerings being more or less defective. Australian Onions are beginning to arrive, but they are held too high for the present market. Peppers and Tomatoes arrived from Florida and were held at \$3 per six-basket crate, netting about 30 lbs.

Beans, String, per lb.....	10	@ 15
Beans, Wax, per lb.....	—	@ —
Cabbage, choice garden, per 100 lbs.....	50	@ —
Cauliflower, per dozen.....	—	@ —
Cucumbers, Bay, per large box.....	—	@ —
Egg Plant, Los Angeles, per lb.....	15	@ 20
Garlic, per lb.....	1 1/4	@ 2 1/4
Musbrooms, per lb.....	—	@ —
Onions, Yellow Danver, per cental.....	2 00	@2 50
Peas, Sweet garden, per lb.....	5	@ 8
Peppers, Green, Los Angeles, per lb.....	20	@ 25
Peppers, Bell, per box.....	—	@ —
Rhubarb, per lb.....	8	@ 10
Squash, Marrowfat, per ton.....	7 00	@10 00
Summer Squash, per box.....	1 50	@1 75
Tomatoes, Los Angeles, per box.....	1 75	@2 25

**POTATOES.**

Prices continue at a high range, but the movement is slow and is mainly on local account. The Middle West, which was expected to draw freely on supplies here, is reported getting potatoes from Nova Scotia and other out of the way places, at lower figures than they can be laid down for from this center. Sweet potatoes were in fair receipt and sold at much the same figures as preceding week.

Burbanks, Salinas, per 100 lbs.....	1 40	@1 75
River Burbanks in sacks, per cental.....	1 15	@1 35
Petaluma and Tomales Burbanks.....	1 25	@1 50
Oregon Burbanks.....	1 30	@1 70
River Reds.....	1 30	@1 50
Sweets, Merced, per cental.....	1 25	@1 50

**The Fruit Market.****FRESH FRUITS.**

Apples are in light stock and desirable qualities are commanding fully as good figures as at any previous date the current season. Apples of the lower grades are not specially sought after and to meet with prompt custom have to go at rather low prices. There is no other deciduous

fresh fruit now offering. Berries are also out of stock.

Apples, fancy, per 4-tier box.....	1 75	@2 00
Apples, good to choice, per 50-lb. box.....	1 00	@1 50
Apples common to fair, per 50-lb. box.....	50	@ 75

**DRIED FRUITS.**

The market for cured and evaporated fruits is showing a generally healthy tone. Aside from old Prunes, stocks are of light volume, and are mainly in the hands of jobbers. Old Prunes are not moving outward as rapidly as anticipated, but are being in the main steadily held, the belief being entertained that they will all be called for at current or better figures before the close of the season. Old are quoted on the 3@3 1/4c. basis for the four sizes, or 1c. under the price of new. The quantity of new Prunes outside of consuming channels is of comparatively small volume and holders are displaying no anxiety about securing custom, feeling confident that more than are now available could be readily placed at full current values long before next crop will put in an appearance. Values for Apples are being well maintained at quotably unchanged rates, with supplies too limited to admit of much trading and are mainly in few and strong hands. Apricots tend in favor of selling interest, but quotations remain practically as before noted. The market for Peaches is strong at current quotations, as it is also for Pears. The bulk of the Peaches left on the market are concentrated in few hands, and there is no great quantity of Pears in any position. Plums are held much the same as for some weeks past, with existing stocks largely in the hands of jobbers, especially of desirable qualities. The present outward movement in dried fruits, while not of heavy volume, is of very fair proportions, considering present light stocks of most kinds and the time of year, and is mainly of assorted carloads.

**EVAPORATED OR BLEACHED.**

Apricots, Royal, choice, in sacks, per lb.....	9	@ 9 1/4
Apricots, Moorpark.....	10	@12
Apples, in 50-lb boxes, rings, pressed, fancy.....	8	@ 8 1/4
Apples, 50-lb boxes, rings, pressed, good to choice.....	6 1/4	@ 7 1/4
Nectarines, per lb.....	5	@ 6
Peaches, unpeeled, fancy.....	8	@ 9
Peaches, unpeeled, choice.....	6 1/4	@ 7 1/4
Peaches, peeled, in boxes.....	12	@14
Pears, bales, choice to fancy.....	6 1/4	@ 8 1/4
Plums, Red and Black, pitted.....	5 1/4	@ 6 1/4
Plums, White and Yellow.....	5 1/4	@ 6 1/4
Prunes, 4 sizes, in bags, 3 1/4@3 3/4c; 50-60s, 4 1/4@4 3/4c; 60-70s, 4@4 1/4c; 70-80s, 3 1/2@3 3/4c; 80-90s, 3 1/4@—; 90-100s, 3c@—; these figures for 1901 crop.		

**COMMON SUN-DRIED.**

Apples, sliced.....	3	@ 5
Apples, quartered.....	3 1/4	@ 4 1/4
Peaches, unpeeled.....	5	@ 6 1/4
Pears, prime halves.....	5	@ 5 1/4
Plums, unpitted, per lb.....	1 1/4	@ 2 1/4

**RAISINS.**

The market is strong, with every probability of continuing against buyers during balance of the season. Eastern buyers are not taking hold to any great extent at the advanced figures being demanded, preferring trading with each other in the lower priced stock they still have on hand, the stiffer figures ruling here enabling them to exchange goods with each other at a profit. Their supplies are not heavy, however, and will likely be soon exhausted, when they will be compelled to enter this market. There are probably in the entire State not to exceed 250 cars of all grades and kinds of raisins to be marketed during the balance of the season. Seeded Raisins are being held at 7 1/2@8c. for 1-pound cartons and at 6 1/4@6 1/2c. for the 12-ounce package. Layer Raisins are being offered in a limited way at a decline of 10c. per box, the season's demand for layers being nearly ended.

Following are the prices for 1901 crop in carload lots:

Loose Muscatels—	Per lb.
4-crown.....	6 1/4
3-crown.....	5 1/2
2-crown.....	5 1/4
Seedless Muscatels.....	5 1/4
Seedless Sultanas.....	6
Thompson's Seedless.....	6 1/4
Seeded—	
3-crown, 1-lb. carton.....	7 1/2 @ 8
2-crown, 1-lb. carton.....	6 1/4 @ 6 1/2
London Layers, 20-lb. boxes—	
2-crown.....	—
3-crown.....	1 40

**CITRUS FRUITS.**

Some improvement was manifested in the Orange market over condition of preceding week, the arrivals being lighter and the weather more favorable for consumers taking hold. The firmness existing, however, was confined almost wholly to the higher grades of Navels. The Lemon market was quiet at quotably unchanged rates, with supplies fairly liberal. Limes were offering at reduced figures.

Oranges—Navels, per box.....	1 25	@2 75
Seedlings, per box.....	75	@1 25
Lemons—California, select, per box.....	2 25	@2 50
California, good to choice.....	1 50	@2 00
California, common to fair.....	75	@1 25
Grape Fruit, per box.....	1 00	@2 25
Limes—Mexican, per box.....	4 00	@5 00

**NUTS.**

Not much doing in either Almonds or Walnuts, supplies of both being light and the mid-winter trade ended. Business is mostly of a jobbing character at generally well sustained values. The Peanut market here is without appreciable change, but is quoted easier on the Atlantic side.

California Almonds, shelled.....	15	@18
California Almonds, paper shell, per lb.....	10	@13
California Almonds, soft shell.....	8	@10
California Almonds, hard shell.....	5	@ 6
Cal. White Walnuts, No. 1 soft shell.....	9	@10
Cal. White Walnuts, No. 2 soft shell.....	7	@ 8
Cal. White Walnuts, No. 1 hard shell.....	8	@ 9
Cal. White Walnuts, No. 2 hard shell.....	6	@ 7
Peanuts, California, fair to prime.....	4 1/4	@ 5 1/4
Peanuts, Eastern, hand-picked.....	5 1/4	@ 6
Pine Nuts.....	5	@ 6

**WINE.**

The market shows much the same condition as previously noted. There is little doing at present in the way of transfers of new wine from first hands. Some dry wine of last year's vintage was reported offering the past week at 22c. per gallon, the wine being represented as Sonoma county product of fairly good quality. The State tax which attaches in March is being used by dealers as a club with which they aim to depress the market more than the tax amounts to. Quotable values for dry wines of 1901 are nominally 22@26c. per gallon. The steamer Argyll, sailing from this port on 31st ult., took 328,032 gallons wine for New York.

**Produce Receipts.**

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, per sacks.....	114,947	4,206,084
Wheat, centals.....	144,756	5,965,627
Barley, centals.....	110,410	4,760,312
Oats, centals.....	4,230	699,616
Corn, centals.....	8,131	71,470
Rye, centals.....	9,270	126,465
Beans, sacks.....	7,905	564,889
Potatoes, sacks.....	21,164	957,298
Onions, sacks.....	2,439	154,859
Hay, tons.....	2,306	95,622
Wool, bales.....	99	42,323
Hops, bales.....	155	7,269
		6,810

**EXPORTS BY SEA.**

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, per sacks.....	70,512	3,104,834
Wheat, centals.....	52,870	5,391,983
Barley, centals.....	64,234	3,591,270
Oats, centals.....	101	2,153
Corn, centals.....	3	8,812
Beans, sacks.....	125	19,604
Hay, bales.....	210	10,532
Wool, pounds.....	—	545,331
Hops, pounds.....	2,539	468,562
Honey, cases.....	83	5,592
Potatoes, pack's.....	2,347	39,398
		78,695

**California Dried Fruit at New York.**

NEW YORK, Feb. 5.—Evaporated apples, common, 7@8 1/2c; prime wire tray, 9 1/4@9 1/2c; choice, 9 1/2@10c; fancy, 10 1/4@11c.  
California Dried Fruits.—Offerings are not heavy, and current values are being well sustained.  
Prunes, 3 1/4@7c.  
Apricots, Royal, 9 1/4@13c; Moorpark, 10@14c.  
Peaches, unpeeled, 7 1/4@10c; peeled, 14@18c.

**New Patents.**

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

691,696.—JAR CLOSURE—R. H. Austin, S. F.
691,595.—FRUIT GATHERER—J. D. Carter, Baker City, Or.
691,597.—BICYCLE—A. P. Christiansen, Gardnerville, Nev.
691,598.—ORNAMENTAL STRUCTURES—L. B. Christopherson, S. F.
691,744.—HAY LOADER—F. S. Church, Sierra Valley, Cal.
691,532.—CHILD'S CHAIR—I. M. Clark, Lompoc, Cal.
691,357.—GAS GENERATOR—W. W. Cozins, Linden, Cal.
691,612.—PISTON PACKING—H. Dods, Virginia City, Nev.
691,614.—PEN HOLDER—S. W. Durham, San Jose, Cal.
691,457.—SILK REEL—J. P. Evertz, San Diego, Cal.
691,702.—ROTARY CUTTER—T. F. Hagerty, S. F.
691,376.—FRUIT PICKING SACK—E. Harter, Arlington, Cal.
691,627.—FEED REGULATOR—Geo. Hoepner, S. F.
691,546.—TREE PROTECTOR—T. J. Hubbell, Watsonville, Cal.
691,383.—HORSESHOES—S. Jannus, San Carlos, Ariz.
691,645.—SMELTING FURNACE—G. Mitchell, Los Angeles, Cal.
691,649.—PIPE CUTTER—G. Mitchell, Naco, Ariz.
691,659.—HAY LOADER—E. H. Nicolson, Santa Maria, Cal.
691,728.—BEVEL—N. B. Norfolk, Los Angeles, Cal.

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## CEREAL CROPS.

### The Grain Growing Situation.

TO THE EDITOR:—Since issuing a former address a systematic canvass for subscriptions to the plan of organization for farmers has been made throughout the State. Encouraging results have been realized. In some counties the work has lagged. It is desirable that at our next convention we make as creditable a showing as the importance of our calling warrants. To do this additional efforts are being made to enlist the co-operation of farmers generally. The movement undertaken must and will succeed.

The proposition is a simple one. The grain grower is asked to have his grain shipped to foreign markets, wherever they may be, over lines designated by the Association. In other words, we want a freight-carrying line of ships, sailing from Port Costa to Liverpool and the Orient, which will charge only living, reasonable freight rates. By united action we can secure such a line and make a great saving.

For many months past we have paid from \$8 to \$11 per ton freight on our grain to Liverpool. The shipping of our crops was considered a good business when we paid but \$5 and \$6 per ton. Combinations have been formed that are seriously crippling us. The profits from our produce, which legitimately belong to us, now go to others. Combination did it. Combination begets combination. The challenge is out. Shall we accept it, organize and have a royal battle, with the prospects of success in our favor? Or, shall we continue to be the slaves of those with foresight enough to organize and properly prepare for the contest?

"There is no doubt that a co-operative society actually controlling the grain crop for a number of years and so managed as to secure the confidence of financial men could effect a great saving to the producer."

If the proposed Association accomplishes anything it will enhance the value of our grain, both wheat and barley, from \$2 to \$5 per ton.

It will also be in a position to do much for the farmer that cannot be represented in dollars and cents. Our business is of sufficient importance and magnitude to entitle it to a higher plane than the one on which its operations are now transacted.

There can be no question as to our business being extensive enough to attract men of large means and acknowledged ability. The freight on our grain will be our capital, and as we ship annually about 700,000 tons to foreign markets, we shall capitalize for about \$4,000,000. We will thus step at once into the front rank of business enterprises. We will then be in a position to demand a fair share of the profits of our business.

WHAT OTHER GROWERS ARE DOING.—The grain growers of the other sections are organizing and seeking our co-operation. The Russian and German farmers are prominent in this movement. In our own country the farmers of Washington, through the medium of a very imperfect organization, actually raised the price of grain 3 cents per bushel. The farmers of Kansas, during the season of 1900, did the same thing, and to-day with 40,000,000 bushels of wheat in the elevators in the Wichita section of the State so hold their grain that the flouring mills of that section are tied up. One dollar and thirty-five cents per hundred is the price of wheat now at Wichita, Kansas, while we in California realize about 95 cents per hundred. So organization among farmers has worked, is working and will again work to their advantage. When the grain growers generally form

a World's Association, which will be the logical outcome of the local associations, they will be in a position to take up those larger questions, chief among which is the selling price at foreign markets. It goes without saying that the price will then be manipulated in the interest of the farmer. This is not a visionary idea. It is entirely practicable and possible. Yes, more, under existing business conditions, it is probable.

The farmers of California propose to organize. They are going to organize. They are going to place the California link to the chain of organized producers that is destined to encircle the world. The resolute men among them have determined to have something more than the responsibility, something more than the losses of the business. There is no reason why every farmer should not join this Association, and every possible reason why every enterprising and progressive farmer should become a member.

INDUSTRIAL COMBINATIONS. — During the last quarter of a century no other principle of business practice has advanced with the strides that approach the marvelous growth of the idea of combination of mutual interests.

"In all departments of human activity, organization is the order of the day, and the wonderful results that are being wrought out in manufacturing and mechanical circles are largely due to the fact that those interested in such enterprises have banded themselves together and become an organized force."

The farmer more than any other class suffers from the workings of these combinations, and yet is the last to avail himself of the benefits to be derived from organization. During all these great changes the business methods of the farmer have remained practically unchanged. Many do not seem to realize that great benefits can be secured by united action. A campaign of education is now on. Low prices for our products, and the short end of almost every business proposition in which we engage has taught us that individually we are weak.

Nearly \$20,000,000 worth of farm property in California is now held by the banks of our State. Many millions more have passed from the hands of the original owners, through forced sales. Not less than \$100,000,000 is now loaned on farm property in California. Unless something be done to make the business of the farmer more remunerative, much of that property will be lost by the present owners. Thousands of families now enjoy their farm homes only because of the fact that the holders of the mortgages on the places cannot so handle the property as to secure a fair rate of interest on the money invested. Dangerous ground that! The banks do not want our lands, and in time they will not want securities unless we do something to enhance and maintain their values. The latter we can only do by increasing the value of our products. The proposed Association will open up great possibilities in that direction. Can we afford to lose this possible benefit? Ponder on this question. It is no trivial matter. A great industry of this State is threatened with annihilation. Even now bankers hesitate about making loans except on the most desirable tracts. Each year, with present prices, our grain land is depreciating in value. With our credit impaired and disappearing, with capitalists hesitating about rendering us further aid, one need not be gifted with the foresight of a prophet to see the end. No grain raiser in the State

STATE OF OHIO, CITY OF TOLEDO, ss.  
LUCAS COUNTY,

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is receiving the profit on his business to which he is entitled. He takes all the risks of the business, and grows poor. He is compelled to part with his crops at ruinous prices, while those to whom they pass grow rich.

AN EXHORTATION.—Is it time to act? How much longer can we exist under present conditions? Individual instances of the inability of the farmer to secure the necessities of life for himself and family under the present handicaps are too numerous.

As a class we are weak, confessedly weak. This very weakness at this time is an element of strength, for its tendency is to bring us together for mutual protection. Farmers generally realize that something must be done to better their condition, if they are to remain in business. How can we secure a just share of the profits of our farms? Through organization and by making a combined effort only can we show sufficient strength to make a demand that will receive attention. Fellow farmer, you are asked to give this matter your serious consideration. Join the Association. Contribute to its success what strength you possess. Do not hesitate on account of the small expense incurred on joining. If the Association succeeds, as it surely will if the farmers give it their support, that small membership fee will return to you a greater net income than does a section of grain land under present conditions. The only other possible expense in the matter will be a small annual tax per ton to defray the actual necessary running expenses of the Association. The amount of that tax will depend upon the amount of grain handled, while the benefits derived will increase yearly as the work of the Association develops.

Do not wait for some one else to join and start the movement. Be a positive force yourself. If you want to realize money for your produce join this Association and share the benefits sure to follow. Do not wait for better times before acting, for better times are not coming unless something be done to compel them to come. The two local parties most directly interested in the grain business are the producers, who foot the bills, and the manipulators, who reap the profits. The latter class is satisfied with existing conditions. Producer, how is it with you?

GEO. W. PIERCE, Chairman.  
Davisville, January 18th,

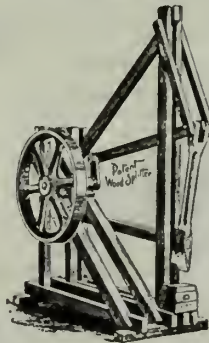
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### To Protect Arizona Oranges From Heat and Cold.

A correspondent of the New York Evening Post, writing from Phoenix, Ariz., describes a gigantic scheme for growing fruit indoors. The project involves the roofing of more than 1000 acres of orange, lemon and pomelo trees.

It may seem strange to persons who know that part of Arizona that protection should be necessary to fruit trees there. But to irrigationists who are aware of the evaporative powers of the Arizona sun a protecting cover offers a solution of one of the most difficult problems which confront orange growers. Arizona oranges on the New York market last month brought the highest price ever known, but the crop was very short—less than half of that of a year ago, and not more than one-fourth as heavy as that of two years previous. For the shortage the growers blame the excessive heat of last summer, and it is to guard against a repetition of such a condition that they are preparing to cover their groves.

The plan is a simple one, elaborate only in its size. Poles will be put up in the orchards, and on these will be strung heavy wires in parallel rows. Then will be cut the heavy willow brush, the variety known as the water motus, which grows from 5 to 10 feet high, along all the water courses of Arizona. These sticks will be laid across the wires, with spaces between of from  $\frac{1}{2}$  to  $\frac{3}{4}$  inch, and thus form a roof which will not keep out the sun entirely from the trees, but will break the fierce heat of the midday sun. Thereby the earth about the roots of the trees may be kept moist by less frequent irrigation and thus prevent the hard baking of the soil, which prevents the proper spread of the roots.

Some time ago experiments were begun in putting covers of canvas over orange trees, but that plan was abandoned because of the fact that the cloth covering kept out too much sunshine.

The work now in progress is being watched closely by the officials of the Government experiment stations at Phoenix and Tucson. While in Arizona

the roofing for the orchards is intended primarily as a protection from the sun, it will also serve to keep out the frost, which sometimes occurs. It has been customary in the orange countries to build at night low fires through the groves, or to make smudges. These methods, however, have never proven satisfactory, and to provide a better fuel extensive experiments are being made at Senator W. A. Clark's coal fields at Gallup, N. M. Here it has been found that a composition made up of coal dust, held together by a small quantity of asphaltum, together with an equal amount of crude oil, provides an economical fuel, which will give out strong and steady heat and holds its fire for a long period. This composition is being made into bricks, which can be easily handled and placed about the orchards. With the protection of the roofs and the heat from these bricks of fuel it is believed has been found the safeguards which will do away with the obstacles which prevent, in many localities, the raising of citrus fruits at a profit.



PAGE

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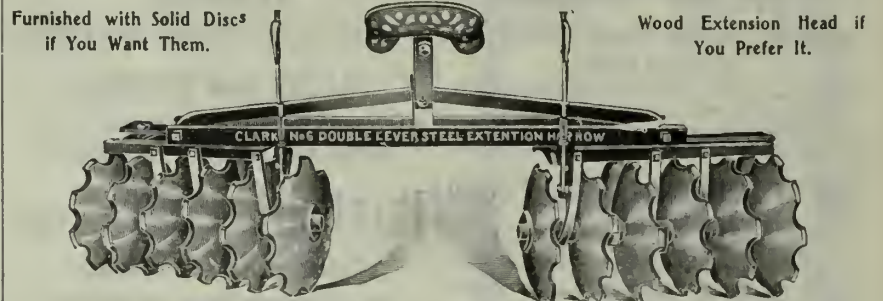
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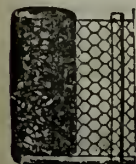
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**Bertha**—Dark brown mare. Sire, Carr's Mambrino; dam, Emma. Has not foaled yet.

**Belle**—Black filly, foaled March 20, 1893. Sire, Alpheus Wilkes; dam, Lady Nelson. Bred to Boodle Jr.

**Trix**—Black filly, foaled April 20, 1899. Sire, Ecce; dam, Belle.

**Necessity**—Light bay filly, foaled February 22, 1897. Sire, Magenta; dam, Unique.

**Dora**—Bay filly, foaled April 2, 1890. Sire, Reno; dam, Martha. Bred to Major.

**Epha**—Bay filly, foaled April 24, 1892. Sire, Euglineer; dam, Puss. Registered in Vol. XIII. Bred to Boodle Jr.

**Ellele**—Light bay filly, foaled March 25, 1895. Sire, Boodle; dam, Mary C. Bred to Nutwood Wilkes.

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**Allegre**—Bay filly, foaled April 27, 1899. Sire, Ecce; dam, Jane.

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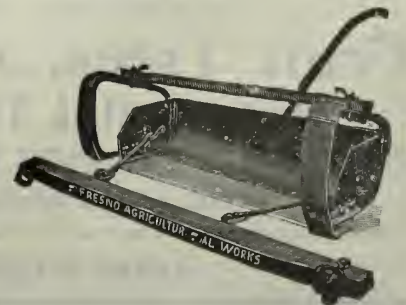
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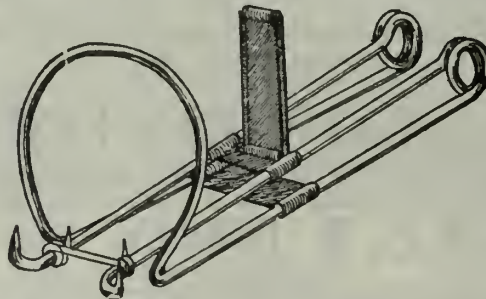
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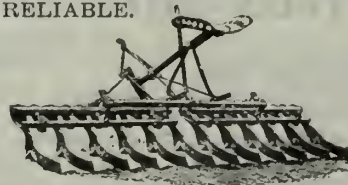
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# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 7.

SAN FRANCISCO, SATURDAY, FEBRUARY 15, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

### Irrigation Scenes.

We present herewith another group of views exhibiting features of irrigation development, reproducing them from the transcript of Prof. Elwood Mead's testimony before the United States Industrial Commission, to which we alluded last week. The first two pictures give a suggestion of the changes which occur in the landscape of an arid land soon after a stream of vivifying water is led across the waste

upon the right of the picture, is merely the cover which nature, aided only by the water, spreads over the scars which the ditch builder leaves upon the surface.

Whence come the seeds which produce the dense vegetation upon the ditch banks is sometimes a puzzling question, but is partly answered by the fact that the water itself is a wonderful carrier of seeds and chance roots and cuttings of plants which may fall upon the surface at some indefinite distance

shaggy coats of animals which come to slake their thirst in the new stream which man has led across the arid land.

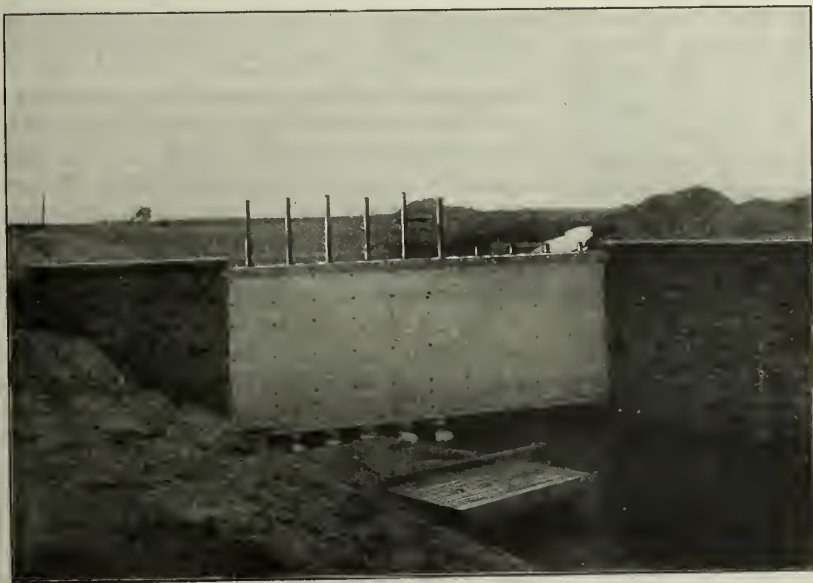
With all these agencies contributing to the planting of the moist margin of the stream, it is not so strange that the sharp outlines of the grader or the dirt heaps of the scraper should soon hide from view beneath the mantle of volunteer vegetation. It is true, however, that this rich growth upon the ditch bank is not a clear gain to the development of the



Appearance of Irrigation Canal When First Completed.



Appearance of Irrigation Canal Ten Years After Completion.



Headgate of Consolidated Canal Company, Arizona.



Division Gate of Consolidated Canal Company, Arizona.

which needs only moisture to make its naturally rich stores of plant food available. In the pictures these changes seem to have taken place largely without the aid of the planter. Vastly greater changes can be more speedily realized where planting is done, and this can be demonstrated by views taken in any of the irrigated districts of California, where a decade has transformed thousands of acres of sheep range into productive orchards and gardens and adorned roadsides and parks with shade and ornamental trees. Ten years with water and cultivation has wrought contrasts credible only on the basis of experience and observation. These pictures are less notable than those of well-planned and executed development, and yet are, perhaps, quite as significant when it is remembered that the change noted, except

above, and thus not only the ditch, which may run for miles, but the whole upper courses of the stream from which it is diverted, which may include hundreds of miles of moving water, are gatherers of seeds for the lower levels. These upper courses receive the contributions from mountain rills and rivulets which collect seeds and roots dislodged from forested slopes swept clean by cloudbursts, and when all these things are brought to mind it does not seem so strange that not only herbs and shrubs but stalwart trees are found in growth unbidden wherever the ditch water flows. Besides these tourists upon the flood from most distant parts, there is usually along the ditches a growth of the local wild plants and cultivated plants of all kinds which are carried on the wings of wind or bird, or dropped from the

country. The growth diminishes the efficiency of the ditch and changes a quick business-like flow into a sluggish stream idling between its sedgy banks. Nor is this all, for the water brings weed seeds of all kinds and sows them along its banks and then harvests the wonderful crop they bear and delivers it wherever the water flows over cultivated lands. On the whole, though one might write a poem about the blessing of nature upon the stream in the verdure along its borders, the irrigator would have his own opinion just the same and if nature would keep his ditch clean he would thank her for it.

Turning from the work of nature we come again to that of man. Two pictures show practical constructions which may be suggestive to ditch builders.



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DEWEY PUBLISHING CO. Publishers

E. J. WICKSON. Horticultural Editor

San Francisco, February 15, 1902.

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## The Week.

During the present week the central and upper regions of California have enjoyed the most business-like storm of the season and have been much pleased and refreshed thereby. Higher temperature has started field growths of grain and pasturage in the valleys and foothills and the mountains have been covered with a snow mantle which assures summer water in good measure. Prospects are promising for all products and a full acreage will be employed. Reference to the Weather and Crop Report on the next page and to the rainfall table following will show the generally improved outlook.

Wheat is about the same as a week ago. There is no crowding to sell and futures, though disposed to oscillate somewhat, are firm. Five full and one part cargoes of wheat have gone out, and these, with a large shipment of flour and small lots of barley to Europe and Australia, make an aggregate export value for the week in these lines about half a million dollars. Barley prices are firm and the whole cereal line is held up well, though spot trading is not free. Prices are, however, on the whole, low and could not well be reduced by the improved outlook. Freight rates are still low, ships being chartered at 27s 6d, while ships previously chartered at considerably higher rates are still coming in. Beans are quiet at the old range. Some alfalfa seed is going to Australia. Bran is easier, as the visible supply has increased; ground feeds are, however, firm, in sympathy with the grain market. The higher grades of hay are softer say 50 cents per ton because of the rains, but the lower grades hold their old rates. Beef and mutton are moderately firm and in good tone; hogs and lambs are slightly higher, as receipts are less. Butter is firm, especially medium and lower grades, which are relieved from competition with packed butter, which is scant. Cheese is unchanged. Eggs are in good demand at the lower rates, both for local use and shipping. Poultry is selling well with a good demand and light receipts. Potatoes are holding up and moving slowly. Onions are easier. Asparagus is now in, and other fresh vegetables which are in light supply are selling at good rates. Apples are unchanged. Strawberries are in from Santa Barbara. Choice oranges are in good demand, but the offering is mostly off grade. Lemons are in the same condition. Dried fruits, except prunes, are in good demand from second hands and in moderate or light supply. Honey and hops are about the same and wool is still waiting.

Railroad rebates is a rolling alliteration which has a pleasant sound probably to those who are enjoying them, but it has an irritating effect upon others.

California growers have had much to say about the iniquity of these rebates, and with good reason—in fact, they have sometimes thought that rebates were restricted to overland traffic and were especially contrived for the robbery of California producers by those who had the favor of the railways. It is rather interesting to note that the evil exists far more widely, and the fact that rebates figure largely in Eastern grain transportation may directly concern our readers who are giving attention to the effort to organize the grain growers. The Orange Judd Farmer, working over a recent report of the Interstate Commerce Commission, finds that eastbound railroads freely cut export rates on wheat 2½ cents per 100 pounds below the published tariff, Chicago to the seaboard. From Buffalo to New York the railroads made a very low rate upon wheat received from lake steamers, but did not make a correspondingly low rate on export flour. The open wheat tariff from Kansas City to Chicago has been 12 cents per 100 pounds, and the actual rate as low as 5 cents; to Galveston, the domestic rate 37 cents and the export rate 15 cents—favorable to foreign milling interests and against our own. Another manifestation is seen in the practice in the West of allowing some person a concession which enables him to handle all the grain transported upon a particular railway. The commission concludes, among other things, that grain moves from points of origin to the seaboard generally upon secret rates. The effect of this is to discriminate in favor of the foreigner, to give preference to particular shippers, to exclude from business the small operator. In dressed meats the established tariff east of Chicago had been cut 3½ cents to 5 cents per 100 pounds. West of Chicago the rates on these products were 2 to 5 cents lower than the published tariff. Sometimes rebates were paid, sometimes the freight was billed at the cut rate, and sometimes the published rate was reduced when the freight money was paid.

Speaking of railway affairs, the fruit growers will be pleased with the contrition which the managers express in the matter of refrigerator cars. They really seem to be determined to play no more into the hands of car companies with all their extortions. It is telegraphed from Chicago that the management of the Santa Fe has decided not to renew its contract with the Armour fruit car lines when it expires next spring. The company has been busily engaged for several months building fruit cars, and by the time of the expiration of its contract will have between 4000 and 4500 cars ready for the carrying traffic. It is also understood that the Southern Pacific will break its relations with Armour and go into the fruit-carrying business on its own account. Such being the case, the Chicago sage who furnishes this information argues that there will be at least 3500 and possibly 4000 fruit cars for which the Armour Company will have to find other business, and this may bring on a fruit-carrying war. We have no idea that these parties will hurt each other very much, though it seems probable that the railways would get weary of the blame which they have had to bear for lack of cars when wanted. The statement is that the present system contracts with car lines are made so that the railroad company can call on them for cars during the season up to a certain number, said to have been last year about 2000 for each road. For some reason cars were not furnished with sufficient promptness and in sufficient numbers to take care of the trade. This resulted in a great loss of fruit and the railroads stood the blame. Another reason why the railroads should own their own cars is that they are compelled to pay the private car lines three-quarters of a cent for every mile made by every private car, and in the case of the fruit trade this amounts to nearly \$125,000 a year. Of course, it does not appear that all this should be a rebate to shippers, but the condition has been so bad hitherto that almost any change could hardly be for the worse.

In the great exposition which is to be held next year in St. Louis to commemorate the great acquisition of territory by the United States through the Louisiana purchase, the Department of Agriculture will have the largest building, covering more than thirty-two acres and having a perimeter of more than a mile. In addition to this will be the live stock

pavilions and the ground devoted to out-door exhibits. Californians will be interested to know that the agricultural department has been placed in the charge of F. W. Taylor, who has been doing that sort of work acceptably at leading expositions ever since the Chicago World's Fair. Mr. Taylor will also act as chief of the horticultural department—temporarily, we hope, for we want that place for California and to see Mr. J. A. Filcher fill it before long.

The issue between the different parties who have had in charge the warfare against oleomargarine before Congress has been settled by the drafting of a new bill by the House Committee on Agriculture, which is believed to comprise all the strong points of both contending bills and to allay the irritation which clearly should have never arisen. This new bill has a support of 12 to 5 in the committee, while the old Groat bill, though favorably reported last year, was so reported on a vote of 9 to 8. On this basis the oleomargarine regulation looks more promising than a year ago. But while the affair is growing more peaceful at the East, the issue is sharp in livestock conventions where the beef and dairy interests contend, and the Oregon delegates walked out of a Montana meeting the other day because the meeting proposed to uphold the interests of the steer rather than of the cow. This issue can hardly be harmonized, and the overwhelming superiority of the dairy interest must result in the effective prevention of the steer from doing up his tallow in a butter tub.

The special study of the peach moth by Mr. W. T. Clarke of the agricultural department of the State University is being vigorously pursued with the full interest and co-operation of the peach growers of Placer county, and important results are being secured in a preliminary way. On another page of this issue will be found the fact that according to observations thus far the lime, salt and sulphur spray is the most effective, and all growers who lose peaches from the work of worms in the pulp near the stem are urged to take up the fight against the pest at once. It is still early enough in most parts to use this wash without injury to the buds—in fact, Mr. Clarke shows that the wash must be used as late as is safe to the buds, because the worm is most vulnerable at that time. We shall have a fuller account of this matter in our next issue, but we have enough this week to excite growers to prepare for spraying. This wash will kill open blossoms and every effort should be made to use it just at the right time.

Though we are very partial to the peach and look upon it as one of California's greatest fruits, it is, of course, possible that the peach may be planted beyond its proper ratio to other fruits. We are informed that the rage for peach stock of a few canning and drying varieties is such that nursery supplies have run short. If this report is accurate it should suggest to planters the desirability of not putting all their chances into a peach basket. It may be that the apricot is not being given proper attention. If one has soil and situation befitting it the apricot is certainly a good thing to plant, judging by the prices which have prevailed for the last few years. If a regular bearing tree yielding a good sized, evenly ripening fruit, is planted in the right place, there is certainly a good outlook for it. The same may be said for pears, large prunes, apples, etc. All of these should receive the careful thought of planters and selection made according to the fitness of the soil and the locality. Look into this matter carefully and you may find it desirable to diversify your planting somewhat, but of course do not go too far in this direction. Museums in the fruit line are seldom profitable.

Readers of the PACIFIC RURAL PRESS resident in San Francisco and vicinity will be interested in the free lectures on "The Milk Supply of a City" which are being given at the Mark Hopkins Institute in this city by Mr. Leroy Anderson, dairy instructor of the University. The public is cordially invited to attend and is manifesting much interest in the work. The next lecture will be at 4 p. m. on Monday, February 17th, on "Adulterations of Milk and Methods of Detecting Them," and at the same hour on February 24th on the "Production and Marketing of Milk." Many suggestions of wide practical value can be drawn from Mr. Anderson's discussions.



QUERIES AND REPLIES.

Plant Breeding.

TO THE EDITOR:—Prof. P. G. Holden of Illinois makes use of the word “breeding” in selecting isolated localities for keeping seed corn of the different varieties pure, and he speaks also of “breeding grounds.” The Indian corn growers held a meeting at Indianapolis recently and Prof. A. D. Shamel of the Illinois College of Agriculture “made a plea for uniformity in the growing of breeds of corn.” The use of the word breeding in this way is not in accordance with my ideas. Please give me your opinion.—READER.

The word “breeding” is now frequently used in connection with plant improvement of all kinds, and seems to be justified, because the processes which are now being used in the improvement of plants include care, selection, training, choice of environment, as well as hybridization. All these matters are included in the broad term “breeding” as applied to the human species and to improved strains of live stock as well. There seems to be no other word which would so well carry the same ideas of improvement over to the plant world and express the various agencies and processes now being used by intelligent propagators. We certainly have new breeds of corn produced by one or more of these methods of improvement which are just as much entitled to the term “breeds” as are improved domestic animals. Breeding grounds for plants would, then, properly be places where any of these processes of improvement are carried on. Isolation is, of course, often a factor in purity of descent, as with animals.

Conditions for Figs.

TO THE EDITOR:—At Winters we have 100 ten-year-old White Adriatic fig trees which do not mature their fruit properly (the fruit being dry and spongy), presumably on account of the dry, hot climate. Your “Hints on Fig Grafting” in issue of Feb. 1st leads me to ask whether the “Calimyrna” or “Capri” have been proven more suitable for such a climate and whether it would be advisable to graft our trees.—READER, Port Costa.

A dry, hot climate is certainly suitable for the growth of the fig tree and the production of satisfactory fruit, providing there is sufficient moisture in the soil. Where this is present we have never heard of the White Adriatic being dry and spongy, though it has other serious defects. Is it possible that your soils are lacking in moisture during the latter part of the summer and that it would require more water to make a good fig? If this is the case we apprehend that the same character would appear in any fig which is grafted upon your trees. Just what would be the behavior of the Calimyrna under these conditions cannot be definitely known because the variety has only fruited in a few places. It appears very clear that if, having sufficient moisture late in the season, you desire to remain in the production of figs, and wish more marketable and satisfactory variety than the White Adriatic, grafting over to the Calimyrna, and the Capri for the pollenization thereof, is the proper proceeding.

Anti-Gopher Plant.

TO THE EDITOR:—I have about two acres of alfalfa for my chickens. By taking good care of it I had a good stand. But along comes Mr. Gopher and ruins it for me. Is there a plant commonly called gopher plant which will drive the gophers away? A friend of mine has given me some seed of this gopher plant, and assures me that it will drive the gophers away. I have planted it, but I do not take much stock in it. If there is such a plant, we likely would have heard of it in the PACIFIC RURAL PRESS. If the plant has any merit I hope you will let me know.—SUBSCRIBER, New Almaden.

The plant which has had some reputation as an anti-gopher plant is Euphorbia lathyris, or Giant spurge. It is rather a handsome herbaceous plant, but is not desirable to have around, for there occur black buds in the axils of the leaves which are berry-like and children sometimes eat them and are seriously poisoned. Though this plant has long had a gopher-fuge reputation, we do not consider it of any value whatever in that way. We have had both the plants and the gophers under observation for fifteen years, and neither seems inclined to give way to the other. The gopher knows enough not to eat the plant, but he works very close to it without hesitation. We know of dozens of people who have made similar observation with the same conclusion. You

cannot depend upon the plant. Use water by flooding your alfalfa, if you can. If not, work hard with guns, cats, traps and poison. We know no other way, except that some have succeeded by pumping bisulphide of carbon or smoke into the runways.

Lemons in Shasta County.

TO THE EDITOR:—Is the Villa Franca lemon a good variety? If so, what soil and climate will it do best in? Will it amount to anything as far north as this place? What is the best age at which to get it from the nursery and transplant it? What is the best time of year in which to set them out?—McCoy FITZGERALD, Redding.

The Villa Franca is a good lemon and the most hardy of the varieties now popular in this State. Budded on the orange root, it thrives on a rather heavy clay loam, though it does not object to lighter loams if of good depth and adequately supplied with moisture. The lemon is more subject to frost injury than the orange, and though the tree will survive a temperature of say 25°, with the loss of some of its younger wood, we would not care to go lower than 25° in selecting a place for lemons, and we would prefer it warmer than that. Of course, you can do more at a low temperature with a few trees in a town garden than you can on a commercial plantation. Do not try to get a large tree for transplanting; two years' growth on the bud is old enough. Better grow the tree where you want it than to move in a larger tree grown in a warmer region. Plant out after all danger of frost is over and be careful to keep moisture ample for growth; but not excessive. Do not irrigate late in the fall; let the wood mature.

Growing Peppers in San Francisco.

TO THE EDITOR:—Can Chile peppers be grown in San Francisco, and would you advise a woman with very little money to undertake their growth as a means of support?—READER, San Francisco.

We do not think pepper growing in San Francisco would be profitable, although if you had a particularly sheltered place, where you get the full amount of winter sunshine, you might, perhaps, market the green peppers at a time when others do not have them. It is not wise to think of bringing peppers into the market when the main crop is available from the moist lands of the Sacramento and San Joaquin rivers, because they are too cheap to give a small grower any profit. Nor could San Francisco compete with the dried peppers which are produced with so much greater advantage where the heat is stronger and drying can be done so much more quickly and cheaply. The dried peppers are chiefly produced in southern California, not very far from the coast, all the way from Ventura to Orange county, although a certain amount comes from the interior lands in the central part of the State, which supply the greatest amount of green peppers in their season.

Grasses for a Shady Bank.

TO THE EDITOR:—From our house in the Santa Cruz mountains to the creek below is a steep hillside which we have just cleared of its tangle of hazel and poison oak and thinned of its madrones and tan oaks. The soil is sandy loam and the surface uneven (not so that we can not run a sidehill plow over most of it). What grass would you suggest planting on this ground—something that would make a good covering, keep green during the dry summer and help to “reclaim” the place?—JEROME CASE BULL, Eccles.

We should try orchard grass and mesquite. Both will do in shade and on light soil. How green they keep in midsummer will depend upon the moisture available, but they will bunch up and live through, probably to an early start of new grass early in the fall. We know nothing better than these for such a place.

English Walnuts.

TO THE EDITOR:—I wish to put out some walnuts on sediment land. Can you give me the various merits and demerits of the Santa Barbara and Pro-parturiens varieties? Is the Persian considered a good bearer?—HUMPHREY PILKINGTON, Santa Cruz.

The Santa Barbara Softshell is not so satisfactory in the central parts of the State as are the French varieties. The Pro-parturiens is one of these and it is a very hardy and prolific bearer, but the nut is smaller and less refined than the Parisienne, Chaberte and Mayette, which are now being largely planted, except in the southern California walnut

district. The so-called Persian or Kaghazi is too small and hard shelled to compare well with the French varieties named. The Santa Rosa Softshell of Burbank is constantly adding to its reputation.

Early Yellow Cling Peach.

TO THE EDITOR:—What cling peach, that will suit canners as to size, would you suggest? The Lemon cling averages too small when anything like a good crop is left on the tree. I think an early variety, that would ripen before all the moisture in the ground has been exhausted, would be preferable. One party recommends the Henrietta. Is it good?—H. H. CARLTON, Napa.

The Tuskena, or as it is wrongly called in the Sacramento valley the Tuscan or Tustin cling, is the best large, early yellow clingstone. It ripens about with Early Crawford. The Henrietta is one of the latest clings, and so is not within your requirements. To get good-sized peaches, the fruit must be thinned when the set is too thick, and if thorough cultivation does not hold moisture enough, the trees must be irrigated to get full size. An early fruit will attain size where a late one might not, it is true, but too much dependence must not be placed on early ripening as a substitute for adequate moisture. The tree has other uses for moisture after the fruit crop is finished.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending February 10, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Warm weather has prevailed during the week and rain has fallen in all sections, greatly improving the condition of grain and green feed. The seasonal rainfall is below the average, but the soil is in excellent condition. There is a good supply of snow in the mountains. Grain has made rapid growth during the warm days, and is looking strong and healthy; prospects are good for a heavy yield of wheat and barley. Pasturage is plentiful and stock are in good condition. Orchards and vineyards are in first-class condition and give indications of good crops. Almond trees are blooming in portions of Holo county. Apricot buds are reported light in some places.

COAST AND BAY SECTIONS.

Conditions have been generally favorable for crops during the week, but heavy rains in the northern counties have somewhat retarded work in fields, orchards and vineyards. The warm weather has caused a rapid growth of grain and green feed in all sections. The rainfall in the southern districts has been lighter than in the north, but sufficient to greatly improve crop prospects and enable farmers to resume plowing and seeding. Grain is in excellent condition and large crops are probable. Pasturage is abundant and stock are doing well. Orchards and vineyards are in excellent condition.

SAN JOAQUIN VALLEY.

Warm weather has prevailed during the week, and light rain has fallen in the central and northern portions of the valley. The seasonal rainfall in all sections is far below the average, and in the southern districts crop prospects are not good. Grain is in fair condition in the northern counties and has made rapid growth during the warm weather. Green feed is very scarce in some sections. Plowing, seeding and pruning are progressing. Orchards and vineyards are in excellent condition, and prospects for an average yield of deciduous fruits and grapes are very good. Irrigation water is plentiful.

SOUTHERN CALIFORNIA.

The weather has continued cool during the week, especially along the coast, and frosts have occurred in some sections. No rain has fallen since last Monday, but the rainfall of the preceding week has proved of great benefit to all crops. Grain sown in December is in excellent condition, and green feed is becoming plentiful. More rain will be needed soon to insure good crops. Water in the wells is falling rapidly in portions of Orange county, and snow is disappearing from the mountains. Orchards and vineyards are in good condition and work is progressing.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, February 12, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the Week.	Minimum Temperature for the Week.
Eureka.....	2.64	16.04	31.77	27.67	58	46
Red Bluff.....	1.28	8.65	13.76	15.87	64	42
Sacramento.....	1.83	9.00	14.53	17.14	62	46
San Francisco.....	.12	2.78	9.31	8.63	70	36
Fresno.....	.00	1.39	5.47	4.83	70	28
Independence.....	.14	6.48	26.33	11.87	66	36
San Luis Obispo.....	.00	4.21	13.59	12.50	68	33
Los Angeles.....	.00	2.46	8.55	5.53	62	46
San Diego.....	.00	.48	.14	2.31	80	38
Yuma.....						



## HORTICULTURE.

## The Jordan Almond.

TO THE EDITOR:—Many have been the inquiries in this State about the Jordan almond, which is imported, shelled, to this country from Spain for confectioners' use. I have answered some of those inquiries in the columns of the PACIFIC RURAL PRESS, and said at that time that I thought I had that very variety under the name of "Provence," having obtained the latter from the old province of that name in the south of France. Now the Department of Agriculture at Washington became quite interested by so many inquiries in regard to this almond, and, to set the question at rest, sent an agent—Mr. Fairchild—to Spain to investigate it and, if possible, secure some scions for testing and propagating purposes in this country. On the 24th of August last I received from the Department a little package by mail, containing three short scions of the Jordan almond with the following explanatory note:

WASHINGTON, Aug. 19, 1901.

We have just received from Mr. Fairchild a few scions of Jordan almond obtained by him in Granada, Spain. They came wrapped in tinfoil and are not in very good condition, but we are sending you three of them by this mail, hoping that they may reach you in condition for successful budding.

Mr. Fairchild has secured them as the result of great effort and they are believed to be a very choice strain of the Jordan type. You will of course appreciate the importance of securing a "stand" of the variety if it is at all possible with the material at hand. Mr. Fairchild is certain that these scions are of the true Jordan type, as he secured them from trees bearing fruit.

WM. A. TAYLOR, Acting Pomologist.

The three scions, I am glad to say, arrived in perfect condition, as fresh and green as if cut from the tree the day before, and I seize this opportunity to compliment the Department for the careful and scientific way of packing anything sent by mail—scions or plants—and the splendid condition in which they reach their places of destination. Such, at least, has been my experience with anything sent to me by the Department.

One of the almond scions—a little smaller than a pencil and of the right size for removing buds with a little wood at the back of them—had heavy shoulders but no appearance whatever of buds. Nevertheless I used them just the same and all "took," but whether they will develop an eye where I could not see any will be determined through the summer. Another of the three scions was pretty small—the size of a straw—the third one was of a size between the two others and yielded good buds. Finally I put on twenty-one buds, good or not, budding the limbs of young branched trees in nursery row, almond and peach stock, and will meet, I think, with reasonable success, the stock on which I put the buds being at the time fully in sap. So out of twenty-one buds laid I expect to have enough grow to insure for good the introduction in this State of the true Jordan almond, whatever be the merits of that particular variety. [We understand that other Californians were also supplied with the scions, and we shall see who succeeds best with them.—Ed.]

I set three of the buds on a young Provence tree, branched and in nursery row, to compare the wood of both through the summer, the wood of the Provence being quite remarkable, on account of its light pink color and upright growth, and so different from all other kinds of almond.

As soon as I obtain results of any kind, I will report to you as well as to the Department, since so many of our people seem to be interested concerning that variety of almond.

FELIX GILLET.

Nevada City, Cal., Feb. 5.

## California Peach Pits Approved.

In the course of a letter to the Rural New Yorker on peach yellows Mr. J. H. Hale, a leading Georgia peach grower, says: Peach trees or pits from central or south Georgia, Florida, central or south Alabama, Mississippi, Texas and California will, I believe, be found absolutely free from any taint of the yellows; but from any other section of America there is more or less danger. There is some unintentional humbug in a good many nurserymen's talk about "Tennessee natural pits" being the best to propagate upon. Those "Tennessee natural pits" coming from Tennessee, eastern Kentucky, western Virginia and North Carolina are often from scrubs and bushes that are lacking in vigor, that just produce a peach pit with a little skin over it. From my experience I would rather have the pit from a big, luscious peach grown on a vigorous, well-cultivated tree, and whether it is a budded stock or natural I don't believe it makes any difference. In 1890, when there was a general failure of the peach crop over a large part of the United States, and peach pits were a scarce article, many Eastern nurserymen had to secure their stock from the canneries of California, and they produced the finest lot of seedlings that has ever been grown. In my Georgia orchard, where the Elberta, Belle of Georgia, Mountain Rose, Stump, etc., grow to highest perfection, and the largest and most luscious peaches often go to the evaporator,

those pits are saved for our nursery work, and after ten or twelve years of experience I am convinced that for my nursery and orchard work they are more valuable than a lot of so-called "Tennessee naturals." I purpose to use only that class of pits in the future, and also to cut all my buds from fruiting trees that produce the very best fruit of their kind. The promiscuous cutting of buds year after year from the nursery row, so as to propagate trees easily and cheaply, has led to a good deal of mix-up, and at the same time propagated inferior specimens of our best standard varieties.

## THE GARDEN.

## Tomato Growing in Napa Valley.

Mr. A. Warren Robinson prepares for the Napa Register a review of tomato growing in his section, some parts of which are widely interesting as embodying the methods employed by different growers.

CONDITIONS.—"Tomatoes, to do well," quoting Mr. Max Theilig, manager of the Cutting ranch, Carneros creek, who has had extensive experience in growing tomatoes, "need a deep, strong soil. On adobe they have succeeded with me admirably. Do not waste time on thin upland soil, where the clay subsoil lays close to the surface. There is an abundance of good tomato land in Napa county. Having the proper soil before planting, be sure of your market. To plant a large acreage of tomatoes, simply on the chances of being able to dispose of them profitably, is to invite loss and failure."

THE BEST VARIETIES.—Cannerymen and growers regard the Trophy and The New Stone as the best varieties to plant, some giving preference to the latter. The best tomatoes put up by the cannery located in Napa the last season were grown by Wm. M. Fisher, Union station, and these were Trophies.

PLANTING.—The method of propagating the vines adopted by all our growers is to plant the seed in hot-beds from January to March. When the young plants have four leaves they are transplanted to cold frames, which are so arranged that the plants can be covered at night, if protection from frost is required. When danger from frost is past—about the first of May, in the vicinity of Napa—the vines are transplanted to the open field. Some growers make the mistake of planting the vines too near each other, for, if thrifty, they will spread 4 or 5 feet each way. Therefore, while some persons fix the distance at 4x4 feet, others prefer to plant 6x8 feet, or 8x8 feet. An early ripening variety is the most desirable, other things being equal.

As with all other hoed crops, the expense of raising tomatoes from first to last is considerable, and has to be taken into consideration from the time the seed is planted until the fruit is marketed. There must be frequent cultivation. A watchful eye must be kept on the vines to protect them, if possible, from disease and destructive enemies.

W. M. Fisher of Union station estimates the cost from the date of planting the seed to the time of harvest, including cultivating, etc., at about \$5 per ton, and the expense of harvesting at about the same figure. Some growers place the estimate at a smaller figure.

"Staking up and tying the vines is often recommended," says one of our local growers, "but this is expensive in large fields, and all expenses must be kept to the lowest possible limit if there is to be a fair profit in the business."

NO IRRIGATION.—The vines raised in this section are never irrigated. The only watering they receive is at the time of final transplanting, when it is requisite that the roots be well moistened. The tomato most in demand at the canneries has a close, firm fiber, the flesh deep red, solid and not watery. Where irrigation is practiced, or where there are frequent showers, this vegetable is apt to be watery and quite acid. It is for this reason that our dry climate is so well suited for producing a solid, sweet, palatable tomato.

HARVEST AND YIELD.—So much for planting and cultivating. "With our ordinary summer weather," to again quote Mr. Theilig, "picking will commence about the last of August and will continue through September and October, or up to the first heavy frost. A fair yield is ten tons to the acre; but with good new land, the crop may reach fifteen or even eighteen tons."

In harvesting, the ground has to be gone over repeatedly, as tomatoes ripen very unevenly and new ones are constantly appearing.

John Ames, the well-known nurseryman, on ground bordering Napa river, just below town, raised the last season about fifteen tons of tomatoes to the acre, and even a larger amount on a portion of his field. The variety was The New Stone. The vines were planted in squares, 8x8 feet.

CANNING.—Enormous quantities of this vegetable are annually canned for home use and for exportation, and the output is constantly increasing. It would seem as if at present the demand exceeded the supply. Five thousand cases were put up by the cannery in Napa in 1901. Very early in the season all were sold to near and distant points. Five times

that quantity could have been readily disposed of had they been available.

"Watery tomatoes," says Mr. Theilig, "are not in demand, nor are very large ones. What is desired is a medium-sized, good-flavored tomato—solid, firm and of a deep red color. Thorough cultivation on the right kind of land will produce these, together with hilling up and hoeing. The soil must be kept loose and all the moisture possible retained."

CONTRACT PRICE.—For tomatoes furnished canneries here and in Alameda county—the principal tomato-growing section of this State—the average price is \$7 per ton. Larger figures have been obtained in special cases, but the above-named figure is the one now generally prevailing.

Provided one has suitable soil and an assured market at a guaranteed price, the cultivation of tomatoes in this valley will undoubtedly prove profitable. "To go ahead and plant a large acreage," says Mr. Theilig, "simply on the chance of being able to dispose of them profitably is to invite loss and failure. The open market in San Francisco is easily glutted, and during the height of the season the open market returns do not cover expenses."

"The only profitable way is to secure a contract from some cannery or preserving company, by which the grower binds himself to deliver a certain number of tons of tomatoes to the cannery, which in turn agrees to pay a certain rate per ton regardless of market rates. These contracts are generally made in January or February, long before planting time, and in general are of an iron-clad nature—that is, the cannery expects the grower to deliver the quantity contracted for regardless of the season. Prices vary from \$5 to \$8 per ton. At the former figure there is very little money made in the venture, but at \$7 and \$8 a good margin is left for profit."

WHAT THE CANNERS SAY.—"Our supplies of this vegetable," says the California Fruit Canners' Association, in a recent communication to the writer, "come from Alameda and Santa Clara counties. The growers there have excellent success with the Trophy and Livingston varieties, both in point of product and quality. There is no good reason why Napa valley cannot produce as good a quality of tomatoes as those grown in the bay counties."

"So far as the demand for the canned product is concerned, it was greater in 1901 than it has been at any time during the history of the industry. This was owing to shortage of crops in the eastern and middle west sections of the country. The shortage may not occur again in a long time, if ever. Ordinarily the demand for California tomatoes is confined to States and Territories bordering on the Pacific. Time was when this State supplied Utah, Montana, Colorado and Idaho; but, owing to several large concerns having been established in the Great Salt Lake valley, these States are supplied by them. We do not therefore see how any greater acreage than is now devoted to tomatoes could be made to pay."

## ENTOMOLOGICAL.

## Winter Treatment for the Peach Moth.

Mr. Warren T. Clarke of the University of California, who is making a special study of the peach moth in Placer county, makes the following preliminary statement concerning winter treatment:

The investigation of the peach moth in Placer county has brought out certain facts, and as these facts have a direct bearing on the spray to be used and when to effectively apply the spray, it is deemed advisable to present the results so far obtained. The work is not yet complete, and therefore it must be well understood that any recommendation made now applies to the winter brood only. We find the worm in winter quarters now and so well covered that no sprays will reach him at this time. Temperature experiments show that on the approach of warm weather the worm becomes active and eats away his covering, and when such conditions prevail spraying will be effective. When warm weather causes the buds to start, and at the same time induces activity on the part of the worm, a spray will do the work expected of it, and not till then. From these facts it is strongly urged that spraying operations be delayed until such times as the buds are well swollen. Experience has generally shown that a spray can be safely applied when the blossoms are just opening, and even when the tree is in full bloom, provided the strength of the spray is somewhat reduced. Our experiments so far, and the experience of numerous growers, seem to show that the best results will be obtained from the lime, salt and sulphur when this is made true to the formula. We give the formula that is now generally accepted and would lay special emphasis on the time required for boiling. Remember that no easy way is known to properly make this spray.

## FORMULA.

Lime (unslacked).....	40 pounds
Sulphur .....	20 pounds
Salt .....	15 pounds
Water .....	60 gallons

Place ten pounds of lime and twenty pounds of sulphur in a boiler with twenty gallons of water. Boil



at least one hour and a half. When sufficiently boiled the mixture should be of an amber color, that is the sulphur will be thoroughly dissolved. Put the balance of the lime, thirty pounds, in a cask and slack it, adding the salt while the slacking is in progress. When completely dissolved add to the lime and sulphur in the boiler and boil for from thirty to forty-five minutes. To this mixture add enough hot water to make the full sixty gallons. Apply hot.

Later experiments may develop other facts of importance, and when such do develop due publicity will be given to them.

## THE DAIRY.

### Reading Course in Animal and Dairy Husbandry.

TO THE EDITOR:—In answer to many inquiries from different parts of the State for information concerning dairying and its allied branches, the agricultural department of the University of California has decided to undertake a reading course for all farmers who are interested in either the animal or dairy industry. The basis of the course will consist of text-books and agricultural experiment station bulletins. Through the kindness of the Department of Agriculture at Washington, D. C., and some experiment stations, we are able to secure a limited supply of bulletins treating of the desired topics. If there should be a growing demand for the reading course, and when an increase in funds will permit, we hope to prepare lessons treating of all the topics from the standpoint of the conditions peculiar to California. We trust, however, that under the present method the reading course may prove useful to those interested. Persons taking the course will need to purchase the books, while the bulletins will be sent free from this office.

Four lines of study are proposed, consisting as follows:

1. Cattle: Breeds and breeding.
2. Feeding farm animals.
3. Dairying and dairy bacteriology, comprising the study of milk and milk testing and the manufacture of milk products.
4. Infectious diseases of farm animals.

The student may take such course as he desires, but will be expected to complete one course before beginning another. The completion of a course consists in sending in written answers to a list of questions which will be sent to the student when he notifies us that he is ready for an examination.

Anyone interested may be enrolled as a student in the reading course by writing to the undersigned and stating which line of study he wishes to follow. The bulletins upon that subject will then be forwarded and the student may order the books recommended. Suggestions as to carrying on the study will be sent at the same time. LEROY ANDERSON,

Instructor in Dairy Husbandry.

State University, Berkeley, Cal.

### The California Dairy Product.

The State Dairy Bureau, after wrestling for several months with the difficult task of securing figures showing the output of butter and cheese for the year ending October 1, 1901, has at last completed the work and has given the results to the press. The figures for the year which they cover show it to have been the greatest for butter and cheese production in the history of the State. They were compiled almost entirely from reports sent in by the creameries and dairies, and, unlike in former years, both creameries and dairies have responded well to the Bureau's requests by sending in reports, so that very little "estimating" had to be done. In the case of the creamery output the figures are taken altogether from these reports, so that the amount reported in the Bureau's figures are not over the actual product, but must be under it, if by chance any creameries failed to report.

The table given in this article shows the output by counties, and is interesting, inasmuch as it shows the districts of the State in which the growth of butter production has taken place. As might be expected, the greatest increase has taken place in the alfalfa-growing districts of the Sacramento and San Joaquin valleys, and in southern parts of California. The greatest increase for any county is shown by Kings county, which produced 637,000 pounds, and only 258,000 pounds during the previous year. Fresno county comes very near to having produced 1,000,000 pounds, showing a gain of over 50% over the former year. Other counties making large gains over the former year are San Joaquin, Stanislaus, Sutter, Tehama, Tulare, Yolo, Merced and Amador. Counties that have fallen below their production in former years are most notably Marin and San Mateo, owing to the increasing demand upon these counties by the city of San Francisco for fresh milk and cream. In former years the quantity of milk shipped to San Francisco by the great dairy county of San Mateo was given in its equivalent of butter, which made the butter production almost 1,000,000 pounds greater than this year, which gives only the butter actually made. Humboldt county did not make quite as much as in the previous year, being about 35,000

pounds short. San Luis Obispo and Santa Barbara have fallen off to a considerable degree, owing to the large number of cows that these counties have sold to the counties that made the heavy gains. It is well known that many large herds were moved during the last few years across the Coast Range into the valleys. One of the largest butter producing counties is Los Angeles, which shows a considerable gain, but not in proportion to the growth of the dairy interests, on account of the growing local population, which consumes a large proportion of the dairy output as milk and cream. Sonoma county is one of the large counties that have fallen a trifle short in her usual production, which can be explained by the fact that the county is pretty well occupied, and the growing population in the cities causes an increased milk consumption, and by the further fact that San Francisco is drawing upon her for milk.

In the table below the production of butter in each county by the creamery and dairy methods and the totals are given as follows:

CALIFORNIA BUTTER PRODUCT FOR THE YEAR  
ENDING OCTOBER 1, 1901.

County.	Creamery Method.	Dairy Method.	Total.
Alameda.....	165,954	174,734	340,688
Alpine.....	.....	16,972	16,972
Amador.....	82,500	177,230	259,730
Butte.....	6,000	122,096	128,096
Calaveras.....	13,180	153,800	166,980
Colusa.....	.....	77,100	77,100
Contra Costa.....	49,350	406,560	455,910
Del Norte.....	312,661	188,410	501,071
El Dorado.....	59,588	176,800	236,388
Fresno.....	890,622	74,420	965,042
Glenn.....	.....	112,980	112,980
Humboldt.....	3,804,421	95,000	3,899,421
Inyo.....	80,500	40,500	121,000
Kern.....	120,736	1,352	122,088
Kings.....	624,000	13,000	637,000
Lake.....	71,862	82,460	154,322
Lassen.....	216,300	70,180	286,480
Los Angeles.....	1,262,597	11,342	1,273,939
Madera.....	.....	15,121	15,121
Marin.....	1,557,915	2,203,925	3,761,841
Mendocina.....	334,480	161,350	495,830
Merced.....	371,633	160,000	531,633
Modoc.....	65,000	15,530	80,530
Mono.....	.....	22,760	22,760
Monterey.....	362,246	226,484	588,730
Napa.....	209,220	231,140	440,360
Nevada.....	108,000	1,450	109,550
Orange.....	557,753	1,837	559,590
Placer.....	.....	42,770	42,770
Plumas.....	14,000	361,621	375,621
Riverside.....	323,468	3,828	327,195
Sacramento.....	698,853	75,844	774,697
San Benito.....	118,747	13,840	132,587
San Bernardino.....	182,018	2,710	184,728
San Diego.....	359,159	393,822	752,981
San Francisco.....	35,000	.....	35,000
San Joaquin.....	691,807	4,700	696,507
San Luis Obispo.....	289,816	984,280	1,274,096
San Mateo.....	179,496	216,320	395,816
Santa Barbara.....	371,530	386,160	757,690
Santa Clara.....	121,520	166,400	287,920
Santa Cruz.....	331,266	112,840	444,106
Shasta.....	.....	27,840	27,840
Sierra.....	164,000	41,000	205,000
Siskiyou.....	312,808	65,378	378,186
Solano.....	101,500	447,960	549,460
Sonoma.....	1,507,898	1,507,429	3,015,227
Stanislaus.....	632,753	3,650	636,403
Sutter.....	126,445	295,760	422,205
Tehama.....	43,750	71,520	115,270
Tulare.....	441,900	1,580	443,480
Tuolumne.....	.....	244,080	244,080
Ventura.....	18,240	81,120	99,360
Yolo.....	602,975	64,960	667,935
Yuba.....	22,040	61,490	83,530
Totals.....	19,017,512	10,713,370	29,730,882

It is difficult to make an exact comparison with the product of former years on account of a change in the system of reporting statistics. As already stated, in former years a large amount of the milk consumed in its natural state was calculated into its equivalent of butter and credited to the different counties. This must have amounted to nearly 2,000,000 pounds, which should be deducted from former years in making a comparison with 1901, which includes only butter actually made. The figures reported in former years and for 1901 are as follows:

1897.....	28,678,439
1898.....	23,691,028
1899.....	24,868,084
1900.....	28,782,859
1901.....	29,730,882

### The Latest About Dairy Co-operation in Denmark.

As the co-operative dairies of Denmark serve as a most conspicuous instance of the success of co-operation as applied to agricultural interests, the following sketch furnished by Consul J. C. Freeman of Copenhagen, and sent to the PACIFIC RURAL PRESS in advance sheets of forthcoming consular reports by the State Department, is of much interest.

ANCIENT AND MODERN CO-OPERATION.—The principle of co-operation, as manifested in the common ownership of the soil and the common care of the cattle, is prehistoric in Denmark. While this sort of co-operation naturally ceased with the great agricultural reforms at the end of the eighteenth century,

a new sort of partnership has taken form in the course of time and many associations have come into being whose aim is, through mutual help in purchase and production, to obtain the greatest possible profit for the producer. Partnerships of the latter description have had a rapid development during the last decades—a development illustrated by the method of handling the milk and the marketing of the cattle and swine. As regards the co-operative swine associations, it is worth noticing that, by means of co-operative marketing, the money realized is distributed directly among the producers themselves.

CO-OPERATIVE DAIRIES.—The co-operative dairies are associations from which each member receives a dividend proportionate to the quantity of milk he has delivered. The first Danish co-operative dairy was put in operation in Jutland in 1882. There are now 1032 of these dairies, converting about 3,968,280,000 pounds of milk into \$35,500,000 worth of butter.

The dairies were erected and put into operation at a first cost of \$7,000,000, the initial cost of each dairy varying from \$2000 to \$10,000. The number of shareholders is about 150,000—an average of 146 for each dairy. The number of cows yielding the necessary milk is 858,000, each dairy receiving, on the average, milk from 832 cows. The aggregate production of butter in the co-operative dairies alone amounts to 130,000,000 pounds per annum.

The advantages of the co-operative dairies are evident. They have made it possible for the whole community of small farmers to produce butter of a first-rate and uniform quality, up to the standard required for export. They are, moreover, enabled to produce a greater quantity of butter from a given quantity of milk. There has been a stricter control of the productive efficiency of each animal, a strenuous effort for the improvement of the latter by better feeding and a further improvement of the qualities of the soil.

The increased production of high-grade butter, resulting from the continual development of the co-operative dairies, is indicated by the surplus exported, which advanced from 19,000,000 pounds in 1879-80 to 153,000,000 pounds in 1900.

RESULTS.—While the manor farms, owned by the wealthy proprietors, have for a long time produced butter of a high grade, which sold at high prices, it is only since the establishment of the co-operative dairies that the small farmers have been able to enjoy similar returns for their product. As more than three-fourths of the milk-producing stock is to be found on the small farms, the importance of these better prices to the country, as a whole, is obvious.

The employment of strong food has also increased. The import of bran and oil cake for this purpose, which was valued at \$1,340,000 to \$1,608,000 in the 80s, now amounts to \$10,720,000 a year. The bulk of this import comes from the United States.

METHODS.—Each separate dairy is under the management of a farmer or tenant. These vie with each other in the excellence of their product. The efficiency of the dairies has been greatly enhanced by the work of competent dairy experts or counselors paid by the Government, who are always ready to go where their services are required, to correct mistakes and remedy deficiencies in the manufacture.

While the co-operative dairies have been instrumental in raising the quality of the product and in bringing prosperity to the farmers, they have exercised an important influence in other provinces of agriculture, their success promoting similar associations in other departments of farm work.

BUTTER EXPORT ASSOCIATIONS.—In close connection with the co-operative dairies are the Danish Farmers' Butter Export Association of Copenhagen and the Co-operative Butter Factory of Esbjerg, on the west coast. In the latter the butter received daily from the dairies is packed and immediately exported to England. These two companies handled \$4,000,000 worth this year.

THE nautical mile is a length equal to the average one minute of arc of the earth's meridians. It is 6063 feet or 1852 meters. The expression "knot," as used to express the rate of sailing of a ship, is the equivalent of nautical mile. Its origin came from the old means used to measure the speed of sailing. A triangle of wood, called the "log," was attached to a line and thrown over the stern of the boat when the latter was moving. Against the resistance of the vessel it floated upright and the line being paid out remained stationary while the vessel moved away from it. The cords had knots in it  $\frac{1}{10}$  of a nautical mile apart. These knots were counted as they passed through the fingers as the vessel moved, and the number passing in half a minute gave the speed of the ship in "knots" or nautical miles per hour. The name has outlasted its origin. The log now is a small screw propeller fastened at the end of a line and towed after the ship. The propeller turns as it is drawn through the water and twists the line till it turns. The number of turns made are registered on a dial at the ship end of the line and the distance traveled is read directly from the dial face.

IN a case decided in the Douglas county, Or., circuit court it was held that the right of private ownership of land bounded by unnavigable streams extends to the center of the stream.

THE life of a good gas or gasoline engine under ordinary conditions and with proper care is fifteen to twenty years.



## FRUIT. PRESERVATION.

## The Currant Industry of Greece.

Consul F. W. Jackson of Patras in communicating to the State Department says that in a recent circular letter addressed to the various prefects of the currant districts the Greek Minister of Finance has given notice that the Australian tariff upon Corinthian currants has been reduced to 2d (4 cents) per pound, while that upon Sultanas (raisins), figs and dates is to be raised presumably to 3d (6 cents) per pound. In a sense, the new tax upon currants is not so much a reduction as it is a readjustment of former rates, which varied from 2 to 8 cents, according to the district, upon a uniform basis for the whole of Australia; but it will none the less work to the advantage of the currant industry in Greece.

Australia has never been a heavy consumer of the Greek product, although the last five years has seen a decided advance, until she now takes her place next to, but considerably below, the United States—the present season excepted, however, since both Holland and Germany have proved heavier purchasers, twice over, than Australia.

This increased exportation to Australia, however, has been more than counterbalanced by falling off in shipments to France and Russia. The former for many years consumed two-thirds as many currants as Great Britain, and in 1889 the enormous quantity of 70,000 odd tons was exported to France, an amount exceeding that exported to Great Britain by more than 20,000 tons. In 1896, as a result of the heavy duty imposed upon currants for protection to the wine industry, the quantity exported to France fell to 6700 tons, and in 1900 to 1000 tons, while Russia, after her decision against wine manufactured from currants in 1897, has dropped out of the trade entirely.

The above facts serve the purpose of calling attention to the need of Greece and to the relation in which the United States stands at present toward this need. Wider markets for the great export product of the country are manifestly imperative. A great percentage of the population of the Peloponnesus and of the islands adjoining, as well as of the coast part of Aetolia and Acharnania, is engaged in the currant industry. The retention law, which fixes the percentage of each year's crop to be withdrawn with a view of sustaining the market and of developing the wine industry with the surplus, will scarcely be able to accomplish this end, when large crops follow in successive years. While it is true that the success of a currant crop in Greece depends upon many conditions difficult to control, and, in consequence, the yearly output may vary sufficiently to regulate prices, it is equally true that greater efficiency in controlling these conditions is gained from year to year, and large and uniform crops are rendered more probable. This is a fact both desirable and, at present, perplexing; for with poor crops come hardships, and with large crops and an insufficient market profits are not commensurate with the labor expended.

Toward the large crop of the present year the United States has assumed an attitude apart from most other countries, not by heading the list of consumers, which position England has occupied for many years, but by purchasing outright and not upon consign-

ments, thereby doing much to keep the market beyond the control of speculative schemes.

Mr. Jackson then proceeds to exalt a reciprocity idea by which the United States is to sell bluestone in Greece and buy currants. He perhaps does not know that the United States does not need such reciprocity, but can supply herself with something much better than Zante currants in the seedless and seeded raisins of California.

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Where there are only a few head to be vaccinated, strings are convenient to use; but where a large number are to be vaccinated, we strongly recommend the powdered vaccine, used with our regular outfit, as being the most expeditious method, and the immunity conferred thereby is more permanent.

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## Agricultural Review.

### ALAMEDA.

**HEAVY NURSERY SHIPMENTS.**—Niles Herald: The California Nursery Co. is now in the midst of the busy shipping season. Six cars of ornamental and fruit stock were sent to the James L. Flood ranch at Alma via the narrow gauge last week, being shipped from Centerville. Another shipment of five carloads has been made to the Crocker estate in San Mateo county. A carload was sent to San Rafael Saturday. The advance orders are strong and the indications all point to a good season. The demand, however, will be materially increased as the later rains come.

**LOGANBERRY VINES.**—The popularity given the Loganberry the past two years and the prices prevailing has caused many to go into the raising of the berry on a large scale in this vicinity. James Hugill, the pioneer grower of this county, has set out thousands of new plants and will have a good acreage bearing this year, with much more next. Among those who have set out quantities of the new vine are the Tysons, George Donovan and J. B. Terrill. These will not bear until next season.

**TAMWORTH STOCK.**—The Tamworth pigs which have lately "come to town" are creating a great deal of interest. In color they range from a light to a dark cherry. They have a rather long nose, very light jaw, ears erect, legs long with the best of feet. The body or sides are long and deep, the back not wide, but flat on top, bearing a heavy tenderloin. The breed originated in Tamworth, England, a place that has been noted for its high-class bacon all the present century. They grow to great weight without being clumsy. The Tamworths are at Bunting's and Overacker's.

### BUTTE.

**OLD FIG TREES.**—Oroville Register: J. P. Stevenson of Wyandotte claims the oldest fig tree in Butte. It was planted in 1856. The tree in front of R. A. Clindin's home in Oroville was planted in 1857. It is stated there are still older fig trees on the Bidwell lands at Chico.

**TURNING FROM WHEAT TO WINE.**—Biggs Argus: Among the most progressive farmers who are renouncing wheat growing and are devoting their lands to other products are George Thresher, Edward Fagan, Valentine Ambrose, et al. Mr. Thresher has 800 acres of first-class land, sixty acres of which is now in bearing deciduous orchard and returns him more profit than all the balance of his land hitherto in wheat. Mr. Thresher is now planting in addition to his sixty-acre orchard fifteen acres to Muir and Crawford peaches and prunes, and he is also preparing twenty-two acres of land for the planting of wine grapes of the Zinfandel, Fehér Zagos and Mission varieties. Mr. Fagan has already planted ninety acres to grapes, and this year will set out 110 acres more, same varieties as above mentioned, and Mr. Ambrose will plant twenty-five acres to vineyard.

### CONTRA COSTA.

**CATTLE DYING FROM BLACK LEG.**—Clayton Correspondence Oakland Enquirer: The stock raisers of Morgan territory and Marsh creek have been losing cattle by the black leg. Over forty yearlings have died within the last five weeks. There are complaints that a few of the stock raisers do not take any precaution to prevent the contagion from spreading, as they leave dead cattle to rot where they have fallen, instead of burying or cremating the remains, as they should do to protect their stock, as well as that of others.

### FRESNO.

**LARGE SMYRNA FIG ORCHARD.**—Republican: Markarian Bros., the well-known fig packers, will set 450 acres of the old Deming place, 3 miles north of town, in Smyrna figs, and have already contracted with George Roeding for 9000 trees. The land, which has been devoted to wheat, is said to be very well adapted to the culture of the fig. It is being leveled and as soon as water can be put on the land the work of planting will begin. Mr. Markarian believes that in eight or ten years the orchard will yield two tons to the acre, which will net a handsome profit. George Roeding also intends to set out 150 acres to Smyrna figs this season.

### LOS ANGELES.

**A BIG OLIVE ORCHARD.**—Los Angeles Herald: The present crop of the southern California groves is one of the largest, if not the largest, that was ever gathered. An instance in proof of this statement made by growers is that of the Olive Growers' Association grove near Fernando. There are 1100 acres in the grove, in the center of which is the Southern Pacific

station of Sylmas. From this one grove, it is stated, will be produced more oil this year than was ever produced before in all California in one year. There are from 100 to 150 pickers at work in the grove, and they are gathering an average of sixteen and one-half tons of olives per day. The oil mill is producing 600 gallons of oil a day. But one-third of the crop has been gathered, yet there has been picked 1,224,000 pounds of the fruit.

### KINGS.

**WILD PEA FOWLS.**—Hanford Sentinel: J. T. Baker returned from a short business trip to Tulare lake bottom recently and reports everything very dry in that section of the country. He noted a very strange thing while there—the existence of a big flock of pea-fowls scattered through the weeds, miles from any place of habitation. Mr. Baker says they appear to be of a wild variety and it is almost impossible to get within gunshot of the birds. They travel about in twos and threes and are scattered over a large territory.

### MERCED.

**MERCED SWEET POTATO MEN.**—Sun: Merced sweet potato growers are more than pleased with recent developments in the market. With their potatoes snugly housed and keeping to perfection, they see the price advancing at the rate of 5c per sack per week. One buyer has placed orders for 100 carloads on the basis of a 5c advance per week, the present rate being \$1. A prominent shipper who has sent off ten to twenty carloads a week reports a stock of only twenty-five carloads left. Many growers have sold out, not caring to hold above the dollar mark. Most of those yet in possession of their crop have sold on a 5c sliding scale of prices. The stock on hand is reported as keeping better than ever before.

### ORANGE.

**CRUSHING OLIVES.**—Anaheim Gazette: The new olive press at McNally's La Habra ranch is crushing ten tons a day and has made 5000 gallons of oil. The ranch comprises 510 acres of olives, about one-fourth in bearing. The question of picking has been a serious one, but Manager Neff has invented a scheme that reduces the cost to a minimum. He makes rakes by driving 12-penny nails through a cross-piece of wood, and has four men to the tree. They rake the fruit off, letting it fall on a two-piece sheet spread underneath. Cost of handling by this method is from \$3 to \$10 per ton.

### SAN JOAQUIN.

**BIG INCREASE IN VINEYARD ACREAGE.**—Upwards of 500 acres will be planted this spring to table and wine grapes on lands bordering on the northern part of San Joaquin and the southern part of San Joaquin counties. The ground has been thoroughly cultivated and the planting will be done under the direction of Robert Anderson, whose extensive handling and packing of Tokays has earned for him the title of "Tokay Bob." The planting will be done on a variety of soils, commencing with the Whitaker tract of sandy loam near Woodbridge and the heavy clay south of Galt and the gravelly loam northeast of Galt. The acreage to be planted this spring will be about evenly divided between San Joaquin and Sacramento counties. Mr. Anderson states that resistant stock will be used extensively in the new vineyards.

**PROTEST AGAINST SHEEP TAX.**—Stockton Independent: The proposition made at the last meeting of the Board of Supervisors to levy a tax on sheep driven through the county will be vigorously opposed by owners of sheep and by farmers who lease their lands to sheep men for grazing after crops have been harvested. The proposition advanced in the Board of Supervisors is to tax the owners 5 cents a head on each sheep for the damage done to the roads of the county in driving the animals to and from the pasture lands. Many farmers make long contracts with sheep men for the stubble on the grain fields and charge from 45 cents per acre on the high lands to \$1 and \$1.25 on reclaimed lands. The business of grazing on harvested tracts has grown to considerable proportions, and a movement is on foot to unite sheep owners and land owners in a protest against the proposed tax.

### SANTA CLARA.

**CHEAP CATTLE.**—San Jose Mercury: Last week a farmer by the name of Siberia, residing several miles south of this city, sold fifty-eight head of yearling and two-year-old cattle for the total sum of \$185, or less than \$3.25 a head. F. Kohrs of this city was the purchaser. This seems like giving them away when a person stops to think that an ordinary yearling is worth from \$12 to \$15 a head and two-year-olds bring from \$15 to \$20 a head. The reason given for selling the stock so cheaply was lack of feed. Siberia had no

hay, with no money to purchase feed and pasture, was poor, and, rather than allow his stock to die, he decided to sell them. It is now near spring and feed will be getting good in a short time, so that the wintering of the stock will cost but little. Within six months from now the stock will be worth four times the amount which was paid for them.

### SANTA CRUZ.

**A BERRY PLANTING RECORD.**—Watsonville Register: A. W. Scott has beaten the berry planting record in the Pajaro valley. Having leased 120 acres of the Regan place near Vega last year, he planted twenty-seven acres to strawberries. The returns were so satisfactory that he increased his acreage this year by planting fifty-seven and one-half acres more. This work, which has just been completed, involved the planting of 1,200,000 strawberry plants. The work was done in three weeks' time, and 125 men and 20 horses were engaged in the task. Mr. Scott now has 85 acres in strawberries, 7 in raspberries and 24 in blackberries. He has built 3 miles of additional flume and will plant his new land to onions.

### STANISLAUS.

**MONEY IN POULTRY.**—Modesto Herald: Mrs. A. H. Ladd, of the Cedar Cottage Poultry Farm near Modesto, an enterprise initiated with a view more to affording the lady out-of-doors interest for the benefit of her health than for profit, submits figures showing the financial side of the proposition for the year 1901, which was commenced with 500 hens of good repute: Produce eggs sold, \$1200; eggs consumed on farm, \$40; chickens consumed on farm, \$35.95; cockerels sold, \$118.60; young stock on hand, \$1000. Total, \$2394.55. Expenses—Wheat and other cereals, \$622.81; animal food, \$79; bone meal, grit and shells, \$10; hired help and board of same, \$360. Total, \$1071.81. Net gain, \$1322.74. The year closed with 480 of the old hens on hand.

**CHECKED UP 160 ACRES FOR ALFALFA.**—Modesto News: D. T. Curtis, a large owner of land in this valley, has about completed checking up 160 acres in the Turlock irrigation district. The land is situated about 3 miles south of Ceres. Mr. Curtis owns a section in that piece of land. He commenced the work on November 2d last and has had twenty men and fifty animals busy scraping and checking up since that time. The land has been planted to alfalfa and wheat and is ready for water for irrigation.

### SUTTER.

**CARBON BISULPHIDE FOR SQUIRRELS.**—Sutter County Farmer: The use of carbon bisulphide for killing squirrels has proven very successful. A teaspoonful placed upon some absorbent material such as cotton, dry horse manure or a piece of corn cob, and rolled down the holes, will kill the animals quickly. It is necessary to stop up the holes so as not to allow the fumes to escape. Some use four parts of gasoline mixed with one part of carbon bisulphide.

**BEES FOR THE ORCHARDS.**—J. B. Wilkie has made arrangements with Mr. Baker, the West Butte bee man, to place a large number of stands of bees in his orchard at the Bunce place. Last season he had the bees there, and the cherries especially showed good results from the excellent fertilization of the blossoms on account of the busy little workers. Several other fruit growers have had good success in this line.

### TULARE.

**A THRIFTY COW.**—Register: J. W. Dunlap has a cow to which he feels under obligations, for she is a money maker. Last July she gave birth to twin calves, since which time she has furnished something more than two and a half rolls of butter each week, bringing a little over 40 cents a roll. Last week he sold the calves for \$30. He has several other cows that will do as well in the butter making line, but they don't help him so generously in the matter of veal.



## Curb, Splint,

contracted cord, thrush, grease heel and all forms of lameness yield readily to

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Used and endorsed by Adams Express Co.

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Dear Sir:—I want to add my testimonial to your list recommending Tuttle's Elixir for curbs, broken tendons, thrush, and nails in the feet. I have used it on all of these cases many times, and never failed to make a cure.  
Given internally it is sure cure for Colic, Distemper, Founder, Pneumonia, etc.  
TUTTLE'S FAMILY ELIXIR cures rheumatism, sprains, bruises, etc. Kills pain instantly. Our 100-page book, "Veterinary Experience," FREE.  
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Beware of so-called Elixirs—some genuine but Tuttle's. All others are inferior; they offer only temporary relief if any.

## EVERY HORSE OWNER

Should Keep Constantly on Hand



the old reliable remedy for Spavins, Ringbones, Curbs, Splints, etc., and all forms of Lameness.

### ONE BOTTLE SAVED \$100.00.

Headling, Manitoba, Feb. 6th, 1900.  
Dr. B. J. Kendall Co., Dear Sirs:—I had a horse last summer that got prodded with a fork on the inside of hind leg at knee joint. He kept getting worse so I tried a bottle of Kendall's Spavin Cure on it. Now he is just as well as he was before he got hurt. That bottle saved me \$100.00. Yours truly, J. E. JAMIESON.  
Endorsements like the above are a sufficient guarantee of its merits. Price \$1; Six for \$5. As a liniment for family use it has no equal. Ask your druggist for KENDALL'S SPAVIN CURE, also "A Treatise on the Horse," the book free, or address  
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is the closest skimmer, as well as the easiest running and most economical separator made.

Very Simple and Durable. Capacity 150 to 350 lbs per hour. Prices \$60 to \$100. Hand separator circular and illustrated catalogue of dairy supplies free

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## THE HOME CIRCLE.

## St. Valentine's Wisdom.

Cupid sat near to St. Valentine,  
He was sorting out his darts,  
Repairing his bow and his quiver,  
And toying with broken hearts.

Said he to the saint, with weary sigh,  
"I'm tired of this fruitless hunt,  
From sordid, leathery hearts to-day  
My arrows fall dull and blunt."

"Time was when a dart of elder pith  
Would pierce to the very core  
A common heart, and the tougher ones  
It would make exceeding sore."

"Now naught but an arrow tipped with  
gold  
Will reach to a vital part,  
And no such thing can be found to-day  
As a flaming, burning heart."

Said the aged saint, "You quite express  
The thing that I meant to say,  
And we've got to use modern methods,  
If we'd make the business pay."

"The turtle dove it has quite gone by,  
And welded hearts are passe,  
But any battered old coronet  
Has a cinch to win the day."

"And the very swellest new design  
For sealing lovers' letters,  
You would hardly guess! 'Tis the dollar  
sign  
And a pair of golden fetters."

"Then take advice, if the game you'd bag,  
Use only a golden dart,  
And draw a bead on the scheming head—  
Don't aim at the shrunken heart."

—Augusta L. Hanchett in Frank Leslie's Popular Monthly.

## An Unexpected Valentine.

When my dear Aunt Maud died—she died the very summer I graduated—I was really too heart-broken to care what became of me. Still, I had to be disposed of in some way, so it was decided that I go and live with my brother Richard.

I had always lived with my aunt, had known no other mother, therefore her death was the greatest blow possible to me. And this brother Richard I knew very slightly, and that when I was a mere child. If I had been in a state of mind to care about anything, I should have hated the idea of going very much. As it was, I went without a murmur. I took the journey alone, almost clear across the continent, and subsequently, after many ups and downs, arrived at Dick's town, a queer little village in South Carolina.

Dick is a moderately young bachelor. He is an attorney-at-law, and has a very fair practice indeed. Anterior to my advent he had lived by himself in a pretty cottage on the prettiest street, and was rather a central figure, and was the most eligible young man about town. He was not spoiled though. I found him to be a very dear old fellow, and determined in my heart to be to him such a faithful co-operator and satisfactory housekeeper that he would never need nor desire any other.

We got on famously together, so famously that in all probability the last chapter would have found us still there, he a grizzled old bachelor, I a grizzled old maid, had not something occurred which brought about a change.

It all grew out of what happened one Valentine's Eve.

On this day, memorable above all other days, just about an hour after dinner Dick received a telegram to go up that evening to A—, a city 50 miles away, to meet an important client. He did not have time to come home, for the train was then in sight, but he scribbled me the following note, which I did not get until nearly night, because the office boy neglected to bring it until that time:

"3:10 p. m.—DEAR GIRL: Have to leave on the next train to meet a man in A—. Probably won't get home until to-morrow noon. Spend the night with the Ancient (a dear old lady friend of mine). Be sure to put that money in the bank before it closes at 4. Don't fail.  
Dick."

It was such a bore to lock up at that late hour and go out for the night. It

had been such a gloomy afternoon, and looked like it would rain. Altogether, I did not feel like it. I was not afraid, though I had never stayed alone all night in a house. And the money—several thousand dollars collected for a client—surely I could not at 7 put money in a bank that closed at 4. I could not very well carry it with me to the Ancient's and I certainly could not leave it.

I had never heard of any burglaries in the village, so I made up my mind that I would stay at home that night and take the risk, if there was any, because it was troublesome to do otherwise.

I did not want any tea, so I let the servant girl go early, and sat, neglecting even to light the lamps, before a big oak fire in the sitting-room "thinking up" one of Dick's cases. It was a murder case that had a great deal of circumstantial evidence leading in various directions.

I soon became deeply absorbed, so deeply that I presently went to sleep at it, and in a dream saw our poor man tried, convicted and actually sentenced to be hanged, and was myself possessed of a frantic desire to attend the hanging in person, my non-appearance being wholly due to the fact that I could not find my shoes, being separated from them for some unexplainable reason.

I woke up suddenly, frightened to find myself enveloped in darkness, relieved only by the uncanny red glow from the fast dying coals upon the hearth. Everything was still. Not the smallest sound except the ticking of the little clock in my darkened bedroom and the clicking of the dying coals.

I was possessed with a strange, sinking fear. I was afraid to move, afraid to turn my head to left or right lest I see something terrifying lurking in the gloomy corners. I was cold, too, and trembling. The room was chilled; I fancied it must be just before dawn.

My fear increased rather than diminished as the moments dragged by. I could hear my heart beating. I soon became enthralled by horror. I had a kind of instinctive animal fear of impending danger. I thought of the money. It was locked up in the cabinet at my right hand, not two yards away. I found myself listening painfully, tortuously. My throat seemed swollen and I swallowed in gulps.

I endeavored to rally my courage, to persuade myself that I had awakened from a nightmare and was nervous, that there was nothing to fear and that I was making a baby of myself. All to no purpose. Something was going to happen; something was happening at that moment which would bring me hurt.

I could not throw off the notion. Just then it began to rain—a regular down-pour, as if the bottom had fallen out of the clouds. I had never known it to rain so heavily. A perfect deluge, and every drop seemed to penetrate my soul. I did not move. I lay back in my cushioned chair helpless, and felt that I could not have raised my hand to my face if my life were the forfeit. Such pouring! I found myself listening behind the rain—behind all the pattering noise—listening for another sound. I had a grotesque idea that the elements and this something that was coming to me were colleague together, the one to screen the approach of the other.

I was listening with every fiber of my body drawn taut. Listening for what? I did not know. Something beyond, beyond the rain. Then I heard a sound emanating from our little drawing-room—a scraping, sawing sound. It came from the front portion. I knew some one was cutting the Venetian blinds into the house. My faintest doubt vanished soon, when I unmistakably heard the blinds drawn back and the sash creak as it was pushed up. Some one was entering the house! This person, whoever it was, knew of my brother's absence. Good heavens! I thought of Henry, our office man. He brought the note—an open note. It was he who caused the delay which prevented my depos-

iting the money. It was as clear as day. I rose rigidly to my feet. In a twinkling my mind was acutely active and a thousand ways of escape surged through my brain in a moment. I unlocked the cabinet and grasped the pocketbook which contained the notes, and thrust them into my bosom. To what purpose I did not know. I retreated into the dense darkness of my own bedroom, where I stood, uncertain and shivering.

The windows were too high from the ground to admit of my jumping therefrom without incurring the risk of a broken limb; besides there was no time. At the first sign of my putting up the sash I would be detected and overpowered. I heard a heavy tread along the hall. An idea flashed into my head like the incision of a blade. I clutched the money in my bosom and stepped into the fireplace. In another moment I was scrambling up the sooty chimney with the agility of a finished chimney sweep, and I kept scrambling until I had made a stronghold for myself.

What went on down below I did not know. In the cessations of the rain I could hear the heavy tread passing to and fro in a search, I knew, for that money. But I, from my lofty vantage ground, could only thank heaven again and again for such a blessed deliverance.

I was so benumbed with cold and fright that I think I lost consciousness and would probably have tumbled down the chimney but that I was rigid and so walled in I could not.

The next thing I remember was opening my eyes and seeing the square of wan light above me. Then, realizing all, my strength gave away, and I fell heavily, striking my head against something which left me senseless for hours. When I came to myself I was in the arms of a young man whom I had never seen before. He sat upon the floor and held my head across his knees, while he wiped the blood from my cut forehead with a pocket handkerchief, which every now and then he would squeeze out in a basin of water at his elbow.

I don't suppose there was ever a more terrified young man upon this earth of ours. Imagine an inoffensive young man turning up in town where an intimate friend lived, coming in on the very train that takes this intimate friend out. Imagine the intimate friend cordially inviting the newcomer to his house, telling him there was nobody in it, but that he could put up there, make himself lord and master, find plenty to eat by foraging around, and get a good bed. Then to make the thing complete, give him the wrong keys by which to let himself in. Imagine this newcomer booming about town until 11 o'clock, then striking out for his friend's abode, overtaken by the rain; at last to arrive at his intended abiding place to discover that he has the wrong keys, which necessitates his climbing into the house like a burglar. Imagine him piling into the first bed he comes to, very soon sinking off into the untroubled slumber of the innocent at heart, to be awakened at the peep of day by something tumbling down the chimney. Not a hobgoblin—that were better—but a young woman, bespattered and grimy, but still a young woman, and one probably more dead than alive. Imagine it all, if you can, for that is what happened to the misguided young man who held me across his knees and wiped the blood from my broken forehead on that memorable Valentine's morning.

Imagine it and tell me if men through stupidity don't cause half of all the trouble in the world. We explained it all to each other as best we could, for I was really ill, and quite ready to go off into another swoon.

When the servant girl came, he went for the doctor and Mary got me to bed.

Dick came at noon and was horrified at what happened. But the doctor had pronounced me more frightened than hurt; and really, but for the dreadful cold I caught, and my wounded forehead, it did not amount to anything, and soon became a tremendous joke.

And it turned out that this friend of Dick's, whose acquaintance I had made in such an unconventional fashion, was the very client whose money I defended.

And it also came about that—that he—that I—that we have—we have grown to know each very well; and Dick—Dick is to look out for another co-operator before next Fall; because—well, for reasons best known to myself.—Troy Standard.

## Fainting Fits.

Ordinary fainting fits are not often dangerous in the least. They are caused by the temporary absence of blood from the brain, caused by a sudden fright or shock of any kind, even by a slight attack of indigestion. If you are certain the attack is simply one of ordinary fainting, the remedy is a simple one. Lower the head and lift the body and feet a little higher, so as to allow the blood to flow back to the head. Loosen the clothing about the throat and waist and allow an abundance of fresh air to be admitted to the room. Do not allow many persons to stand about the person fainting, as they exhaust the air. Apply smelling salts to the nostrils or ordinary ammonia diluted with water and poured on the handkerchief. A little sal volatile or twenty drops of sweet spirits of lavender in a half glass of cold water will assist in restoring consciousness, when the patient can swallow. Unless a physician is present to prescribe, do not give more powerful medicine.

## To Produce Sleep.

Bathe the head with warm water when hot and feverish, the patient restless and sleepless—no matter what the lesion—then gently fan. The evaporation carries off the heat. Cold or ice water has the opposite effect. The writer (Medical Free Press) has seen patients whose heads had been ice-bound for days, with not a moment's rest, drop off in a few minutes into the most refreshing sleep when the warm water with gentle fanning was substituted for the cold pack. This is especially the procedure in diseases of children.

## St. Valentine's Day.

New hope may bloom  
And days may come  
Of milder, warmer beam;  
But there's nothing half so sweet in life  
As love's young dream.

—Moore.

THE Doctor—I think you understand fully now the directions for those medicines, and this is for your dyspepsia.

Patient—Why, I haven't dyspepsia, doctor.

The Doctor—Oh, but you will have it when you've taken those other remedies.—Tit-Bits.

MRS. CRIMSONBEAK—I see in the paper that a woman, in looking after another woman to see what she had on, fell out of the window.

Mr. Crimsonbeak—Well, that only goes to show that some women in trying to follow the styles can go too far.—Yonkers Statesman.

"THEY used feather trimming largely in Colorado when I lived there, but it wasn't popular with those who wore it."

"No?"

"No; there was too much tar mixed with the feathers."—Browning—King Monthly.

INSURANCE SUPERINTENDENT (suspiciously)—How did your husband happen to die so soon after getting insured?

Wife—He worked himself to death trying to pay the premiums.—The King.

Stranger—Where can I find old Deacon Smith?

Little Boy—In the graveyard.

Stranger—What! Is he dead?

Little Boy—I dunno, mister; he was when he was put in there.—St. John Gazette.



## DOMESTIC ECONOMY.

## Domestic Hints.

**CELERY CREAMED.**—Cut the tender white parts of a stalk of celery into inch lengths and stew until tender in salted water. Drain off at least half the water, and add one or one and a half cups of rich milk and a lump of butter. Thicken slightly with cornstarch dissolved in cold milk. Serve on tiny slices of toast.

**OYSTERS AU GRATIN.**—Chop fine yolk of a hard-boiled egg, mix with a little salt, pepper, and one ounce of bread-crumbs. Place in a buttered dish alternate layers of mixture and oysters, till all is used up, the top layer being of breadcrumbs dotted thickly with butter. Pour a little of the oyster liquor and cream if possible over the preparation. Cover and bake twenty minutes.

**BEEF PIE WITH POTATO CRUST.**—Into a stewpan put slices of cold roast beef (enough to half fill the baking dish you will use), onion, salt and pepper. If there is not enough gravy add water; dredge in one tablespoonful of flour; cover and stew gently. Put this into a baking dish, and cover the top with hot mashed potato. Brush over with egg, and place in the oven long enough to brown the crust.

**SALT MACKEREL CREAMED.**—Soak the fish over night, wipe dry the next morning and broil on a buttered grid-iron. Lay it on a hot dish and make the following sauce: One cup of hot milk thickened with two teaspoonfuls cornstarch rubbed smooth in two teaspoonfuls of butter; add salt, chopped parsley and a pinch of pepper; let it stand a few minutes, then add one egg well beaten; pour over the fish and serve.

**CREAMED CODFISH.**—Heat one and one-half cups of milk in a double boiler and add one and one-half cups of salt codfish (which has previously been picked into small pieces and soaked over night in cold water). Cook ten minutes. Mix one tablespoonful of butter and one of flour to a smooth paste, then stir it into the milk. When smooth and cream-like take from the fire, add a well-beaten egg, stir well and serve without cooking the egg.

**STUFFED EGGS.**—Boil six eggs hard, cut in half lengthwise, take out the yolks and mash them very fine; put aside a heaping teaspoonful of it, add to the rest two teaspoonfuls of butter, three teaspoonfuls of rich cream, a few drops of onion juice, and salt and pepper to taste; mix well, fill the whites of eggs, rounding the top of each to the size of a whole egg. Make a white sauce as follows: Rub a heaping tablespoonful of butter into half a tablespoonful of flour, and stir into it a cup of boiling milk; when it is smooth and thick put the eggs into it carefully, when hot take them out, arrange daintily on a platter, pour the sauce around them, sprinkle the teaspoonful of the yolk reserved over them, garnish with parsley and serve.

**CHICKEN MOUSSE.**—Force four ounces of cold cooked chicken through a meat chopper. Soak a level tablespoonful of granulated gelatine in a fourth of a cup of cold chicken liquor. Beat well the yolks of three eggs, add to them gradually a cup of scalded chicken liquor and cook as boiled custard over hot water, stirring constantly. Add the soaked gelatine, stir until dissolved and strain over the chopped chicken. Season to taste with salt and a few grains of cayenne. Follow previous recipe for chilling and adding whipped cream. Pour into a chilled border mould and

stand aside in a cold place to harden. Turn out and garnish at the base with lettuce leaves, fill in the center with celery and nut salad. Serve as a salad course.

## Hints to Housekeepers.

To wax furniture use a mixture of two ounces white or yellow wax, according to the color of the wood, and which has been melted over a moderate fire; and four ounces of best spirits turpentine; stir until cool, or, if for immediate use apply hot and rub with a hard brush. The polish may be renewed at any subsequent time by rubbing with a large piece of fine cloth.

Since it is the dry quality of the heat that is supplied in our homes that seems its most pernicious quality, it is worth while emphasizing every means by which it may be lessened. The water reservoir of stoves and furnaces should be kept filled, and in addition, water should be kept in an open vessel in the bedrooms and living-rooms at least. The effect on fine furniture and on plants of the dryness of our houses is well known; the injury from the same cause to the delicate membrane of nose, throat and lungs is as great, but is more often unheeded.

Often an oatmeal gruel is valuable in a sick room menu. A trained nurse taught one housekeeper the perfection of its compounding. The coarse oatmeal was used, and was pounded before it was put in a bowl, and the latter filled with cold water. Then the meal was stirred, allowed to settle, and the water carefully poured off three times—the water thus obtained making the gruel. It was boiled for fifteen minutes, seasoned, strained and mixed with a teacupful of hot cream. Served with crisp but tender oblongs of toast, it was a dish that always welcomed by the invalid.

The rose confections of Turkey are thus made: They take a jar like those sold with Dundee marmalade, in which the top and bottom are the same size. In the bottom is sprinkled a layer of crystallized sugar and over it a layer of rose petals, thus alternating until the jar is filled with sugar at the top. Two thicknesses of strong paper are then pasted securely over the top and the jar set in a cool, dark place until fall. It is then cured and can be served as they do in the harems, as a tid-bit, a spoonful to each person. Violets candied in the same manner, and those sold at confectioners' at a high price must be similarly prepared. In regard to rose flavoring the easiest way to prepare the flavoring is merely to fill a bottle with fresh petals and pour on enough pure alcohol to submerge them. They can be crowded down so as to make the essence sufficiently strong. This is an admirable method known to few nice, careful housekeepers. The alcohol can be used like other flavorings.

The simple matter of boiling a fish properly seems to be beyond the intelligence or the practice at least of the average cook, yet the difference between any way and the right way amounts to the difference between a palatable, appetizing dish and one which is flavorless, if not positively repugnant. To every two quarts of water allow a teaspoonful of salt and a tablespoonful of vinegar. Let the water be thoroughly warm, but not boiling, when the fish is carefully put in, unless a fish soup is contemplated, when it should be cold to extract the flavor. The water should be brought quickly to the boiling point, after receiving the fish, and almost immediately drawn to the side of the range to simmer until done, an allowance of ten minutes to each pound being sufficient time after the simmering has begun. If the French "court bouillon" or flavoring water is considered too formidable, as seems to be the case with most American cooks, at least a bunch of soup vegetables, a bay leaf with perhaps two or three peppercorns and a couple of whole cloves are easy additions, and to many of the tasteless fresh-water fish will be a great improvement.

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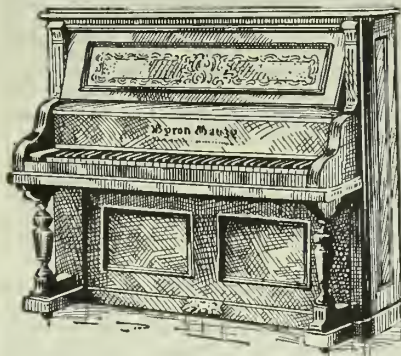
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## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, Feb. 12, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July
Wednesday.....	78½@77¼	78½@77¼
Thursday.....	77¼@78¼	77¼@78¼
Friday.....	78½@77¼	78½@77¼
Saturday.....	77¼@78	77¼@78
Monday.....	78 @78¼	78¼@77¼
Tuesday.....	77¼@78¼	77¼@78¼

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday.....	44¼@44¼	33¼@37¼
Thursday.....	43¼@44¼	37¼@39¼
Friday.....	44¼@43¼	38¼@37¼
Saturday.....	42¼@43¼	37 @37¼
Monday.....	43¼@42	37¼@38¼
Tuesday.....	42¼@43¼	36¼@37¼

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cent was as follows:

	May.	Dec.
Thursday.....	1 08¼@1 08½	1 09¼@1 09
Friday.....	1 08¼@1 08½	1 08¼@1 09¼
Saturday.....	1 08¼@1 08½	1 08¼@—
Monday.....	1 09¼@1 08½	1 09¼@1 09¼
Tuesday.....	1 08¼@1 08½	@—
Wednesday.....	@—	@—

## WHEAT.

While wheat is moving outward from here in moderate quantity, and is not being crowded to sale to any noteworthy extent, the price keeps at a low range. Shippers are believed to be rather lightly stocked, still they have avoided thus far paying above their own limits, judging by reported bids and transfers in this center. If they were compelled to pay more than the difference between ocean freight rates as agreed upon and the price quoted for our wheat in Liverpool, allowing a margin for profit, they would likely pay the higher figures in the interior under cover, and endeavor to make the market here show as depressed condition as possible under the circumstances. This has long been a common practice, in the buying of wheat as well as other produce. When a holder in the interior realizes more than he could obtain here, he is apt to think he has made a good sale, and perhaps has, all things considered, but the buyers who at times pay relatively higher figures in the interior than here are generally the same parties who name the lower figures in this center. Ocean freight rates are not now quotable over 28s 9d to Europe, regular option as to port of destination, and two charters were effected the past week at 27s 6d, but most of the ships now on the engaged list to carry wheat from this port represent prior arrival charters at materially higher figures than are now quotable or obtainable.

California Milling.....	1 10 @1 12¼
Cal. No. 1 shipping, alongside.....	1 07¼@1 08½
Oregon Valley.....	1 07¼@1 10
Washington Blue Stem.....	1 07¼@1 12¼
Washington Club.....	1 05 @1 07¼
Off qualities wheat.....	1 00 @1 05

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	6s2¼d@6s3d	6s3d@6s3¼d
Freight rates.....	37¼@38¼s	27¼@28¼s
Local market.....	97¼@1 00	1 06¼@1 08½

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cent for the week were as follows for the options named:

May, 1902, delivery, \$1.08¼@1.09¼.
December, 1902, delivery, \$1.08¼@1.09¼.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$—@—; May, 1902, \$—@—.

## FLOUR.

In the matter of values there is no quotable improvement to record, and nothing to warrant anticipating any radical changes in the near future. The outward movement is of fairly liberal volume, mainly of special brands contracted for ahead. Business on local account is not what can be termed active. Supplies in this center, while not particularly heavy, are more than ample for immediate requirements.

Superfine, lower grades.....	\$2 40@2 50
Superfine, good to choice.....	2 60@2 90
Country grades, extras.....	3 15@3 35
Choice and extra choice.....	3 35@3 65
Fancy brands, jobbing.....	3 65@3 75
Oregon, Bakers' extra.....	2 90@3 25
Washington, Bakers' extra.....	2 90@3 40

## BARLEY.

Although crop prospects in a large portion of the State have been materially improved by the rains of the past week, values in the barley market have not been reduced in consequence. Included in the week's shipments were 1600 tons to Europe per sailing vessel, and 1200 tons to Australia per steamer, besides a considerable quantity overland by rail to the Rocky Mountain district and Missouri River section. Business on local account is largely in feed descriptions, and with very little inferior barley offering, feed is bringing about as much as export and brewing grades, other than Chevalier. High-grade Chevalier is selling to fair advantage, but poor is not as readily disposed of as common qualities of the ordinary variety of barley.

Feed, No. 1 to choice.....	88¼@ 91¼
Feed, fair to good.....	87¼@ 90
Brewing, No. 1 to choice.....	92¼@ 95
Chevalier, No. 1 to choice.....	1 00 @1 10
Chevalier, poor to fair.....	87¼@ 95

## OATS.

Values for this cereal are ruling steady at the comparatively high figures lately current, but are sustained more through absence of selling pressure than by the demand at full current rates. Buyers as a rule are now operating very slowly at the prices demanded, confining their purchases to most immediate needs.

White Oats, fancy feed.....	1 40 @1 42¼
White, good to choice.....	1 32¼@1 40
White, poor to fair.....	1 25 @1 30
Gray, common to choice.....	1 30 @1 40
Milling.....	1 37¼@1 42¼
Surprise, good to choice.....	1 40 @1 45
Black Russian.....	1 12¼@1 30
Red.....	1 22¼@1 40

## CORN.

There are no large quantities of any description offering, either for immediate or future delivery. Especially is choice Yellow in limited stock. Values remain at a high plane. There is no probability of the market developing any special weakness for some time to come. The demand is not brisk, however, at full rates current.

Large White, good to choice.....	1 35 @1 45
Large Yellow.....	1 35 @1 45
Small Yellow.....	1 50 @1 60

## RYE.

Supplies have been further reduced by another shipment to Europe. Values are moderately firm, but remain practically at same range last quoted.

Good to choice.....	87¼@ 92¼
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## BUCKWHEAT.

Little doing in this cereal, and values for the time being are largely nominal.

Good to choice.....	1 55 @1 70
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## BEANS.

Trade in beans continues of light volume, current asking rates being above the parity of values ruling in Eastern centers, and too high for local speculative operators to take hold. There are not many beans arriving from any quarter, however, and with no special pressure to realize, prices are being in the main fairly well sustained at much the same range quoted for several weeks past. Spot stocks and offerings are largely Pinks, Bayos and Lady Washingtons or Large Whites. There are only moderate spot supplies of Limas, but this variety is held mainly at southern coast supply points.

Pea, fair to good, 100 lbs.....	3 50 @4 00
Small White, good to choice.....	3 00 @3 25
Lady Washington.....	2 80 @3 10
Pinks.....	1 80 @2 10
Bayos, good to choice.....	2 40 @2 60
Reds.....	2 50 @3 00
Red Kidney.....	3 50 @3 75
Limas, good to choice.....	4 50 @4 60
Black-eye Beans.....	3 50 @3 65
Garbanzos, large.....	2 00 @2 25
Garbanzos, small.....	1 25 @1 50

## DRIED PEAS.

No evidence of much doing in either kind. Green or Blue peas are in larger supply than the Niles variety. Quotations are unchanged, but are largely nominal in the absence of any noteworthy trading.

Green Peas, California.....	1 50 @2 00
Niles Peas.....	1 75 @1 80

## WOOL.

Nothing of consequence doing in the local market, nor can there be until Spring wools put in an appearance in sufficient quantity to admit of wholesale trading. There is scarcely any grease wool now offering in this center from first hands and practically none of desirable quality. Quotations for the time being must be regarded as wholly nominal. Prospects for coming crop meeting with a good market are first-class.

## SPRING.

Southern, defective, 7 mos.....	7 @ 8
Oregon Valley, fine.....	14 @15
Oregon Valley, coarse to medium.....	12 @13
Eastern Oregon, choice.....	11 @13
Eastern Oregon, fair to good.....	9 @10
Nevada, as to condition.....	10 @12

## FALL.

Humboldt and Mendocino.....	11 @12
Northern Mountain, free.....	9 @10
Northern Mountain defective.....	8 @ 9
Middle Counties.....	8 @10
San Joaquin and Plains.....	6¼@ 8¼
San Joaquin Lambs.....	7¼@ 9

## HOPS.

Although there are few hops now being offered in a wholesale way or from the hands of growers, buyers are quite conservative in their bidding. It would have to be an exceptionally fine hop that would at this writing command 13c in a regular way in this center. There are hops offering from second hands at 13c and less, the dealers making considerable profit at the lower figures asked, but these hops are of course not the most select. A New York authority cites, under recent date, the situation on the Atlantic side as follows: "The local market has ruled quiet the past week, but a confident feeling pervades the trade, and holders are not urging business. Full late prices are asked for all grades and they are realized when sales are effected. Very few of the remaining lots of State hops are fine enough to reach the top figure, but it is reported that an exporter paid 16c for a really choice growth. We hear of a bid of 15c on a good size lot of Pacific Coast, and some sales to brewers are making at 16c, even a little higher, on usual terms of payment. Lower qualities of both State and Pacific Coast range down to about 11c, but it is difficult to find anything of sufficiently low grade to necessitate the acceptance of the bottom figures. In most sections of this State hops are out of first hands, but in some localities a few growths are back and these are held at from 13@15c generally. The situation on the Coast is very strong and the best lots can not be bought so as to lay them down in New York at less cost than 15c."

Fair to choice, 1901 crop.....	10 @13
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## HAY AND STRAW.

The rains of the past week have imparted an easier tone to the hay market, more particularly for the higher priced grades, these showing more weakness than fair to medium or the cheaper grades. In no instance, however, have quotable values shown a decline of over 50c per ton. Straw market also presented an easier tone.

Wheat, good to choice.....	10 00@13 50
Wheat and Oat.....	10 00@13 00
Tame Oat.....	8 50@11 00
Wild Oat.....	8 00@10 50
Barley and Oat.....	8 00@10 00
Alfalfa.....	8 00@10 00
Volunteer.....	6 50@ 9 00
Compressed.....	10 00@13 50
Straw, ½ bale.....	40 @ 60

## MILLSTUFFS.

Market for mill offal is showing an easier tone, more so on account of weather influences than of increase in offerings or of lessened requirements for immediate consumption. Market for Rolled Barley was unfavorable to buyers. Current values for Milled Corn were in the main well sustained.

Bran, ½ ton.....	18 00@19 00
Middlings.....	20 00@22 00
Shorts, Oregon.....	19 00@20 00
Barley, Rolled.....	19 00@20 00
Cornmeal.....	31 00@32 00
Cracked Corn.....	31 50@32 50

## SEEDS.

The several kinds quoted herewith are being held at practically the same figures current for some weeks past, but business is mostly of a small jobbing character. Alfalfa is receiving a little more attention, but it does not at present seem likely that the supply will prove short of the season's requirements.

Alfalfa, Cal.....	7 25@ 7 50
Alfalfa, Utah.....	8 25@ 8 75
Flax.....	2 40@ 2 60
Mustard, Yellow.....	3 25@ 3 50
Mustard, Trieste.....	2 85@ 3 00

Canary.....	3¼@ 3¼
Rape.....	1¼@ 2¼
Hemp.....	3¼@ 3¼

## BAGS AND BAGGING.

Beyond a better tone in the Grain Bag market, on account of the recent rains, there is no change to record in this department, quotable values continuing as before noted. Wool sacks are expected to be soon called for on account of spring clip, but no fears are entertained of the supply proving short of the demand.

Calcutta Grain Bags, buyer June-July.....	6 @ 6¼
Calcutta Grain Bags, spot.....	6¼@—
San Francisco Grain Bags, 22x36, spot.....	—@—
Wool Sacks, 4 lbs.....	35 @36
Wool Sacks, 3½ lbs.....	32 @33
Fleece Twine.....	8¼@—
Gunnies.....	@—
Bean Bags.....	5¼@ 5¼
Fruit Sacks, cotton, three sizes.....	5¼, 6, 6¼
Fruit Sacks, Jute.....	7 @ 7¼

## HIDES, PELTS AND TALLOW.

Some changes have been made in Hide quotations, principally for Wet Salted, and are all to a lower range of prices

than had been ruling. The Pelt market is without noteworthy change as regards quotable values, but is quiet. Tallow is not lacking for custom, market remaining about as favorable to sellers as previously noted.

## HONEY.

Considering the limited quantities offering there is a fair trade in progress, both for shipment and on local account. Quotable values are without change, but market is moderately firm at the prevailing figures.

Extracted, White Liquid.....	5¼@ 6
Extracted, Light Amber.....	4¼@ 5
Extracted, Amber.....	4 @—
White Comb, 1½ frames.....	11 @12¼
Amber Comb.....	8 @10
Dark Comb.....	6 @ 7

## BEESWAX.

There is no lack of demand at current rates for all desirable offerings. There is not much coming forward, however, and there are no evidences of any large quantities being held in the interior.

Good to choice, light, ½ lb.....	25 @28
Dark.....	24 @25

## LIVE STOCK AND MEATS.

A steady market has been experienced for Beef the current week, with fair demand and offerings not excessive. Tendency on Mutton was in favor of the selling interest, although no pronounced changes were effected in quotable values. There were no heavy arrivals of either Veal or Lamb and desirable qualities of both sold to very good advantage. Hogs brought slightly firmer figures than preceding week, with the demand most active for the smaller sizes.

Beef, first quality, dressed, net ½ lb.....	7 @ 7¼
Beef, second quality.....	7 @—
Beef, third quality.....	6 @ 6¼
Mutton—ewes, 7@7¼c; wethers.....	7¼@ 8
Hogs, hard grain fed, 125 to 200 lbs.....	6 @ 6¼
Hogs, small, fat.....	6 @ 6¼
Hogs, large, hard, over 200 lbs.....	5¼@ 5½
Hogs, soft or acorn fed.....	5 @—
Hogs, country dressed.....	6¼@ 7
Veal, small, ½ lb.....	8 @ 9¼
Veal, large, ½ lb.....	8 @ 8¼
Lamb, spring, ½ lb.....	11 @12¼

## POULTRY.

Demand was fairly good for most kinds, and with receipts of domestic not especially heavy, the general trend of the market was in favor of the selling interest, although in the matter of quotable values there were no appreciable changes effected. Small Broilers were in better supply than for several weeks preceding, and for this description prices were slightly easier. Some chicks are being forwarded which are too small to prove acceptable as Broilers, and such will not command the quotations. Large and fat Broilers and Fryers received the most attention, although full grown fowls of good size and in fine condition did not lack for custom.

Turkeys, dressed, choice.....	16 @ 18
Turkeys, alive, Hens, ½ lb.....	14 @ 15
Turkeys, alive, Gobblers, ½ lb.....	13 @ 14
Hens, California, ½ dozen.....	4 50 @5 50
Roosters, old.....	4 50 @5 00
Roosters, young (full-grown).....	5 00 @6 00
Fryers.....	4 50 @5 00
Broilers, large.....	4 00 @5 00
Broilers, small to medium.....	3 00 @4 00
Ducks, old, ½ dozen.....	5 00 @5 50
Ducks, young, ½ dozen.....	6 00 @7 00
Geese, ½ pair.....	1 50 @1 75
Goslings, ½ pair.....	2 00 @2 25
Pigeons, old, ½ dozen.....	1 25 @—
Pigeons, young.....	2 50 @2 75

## BUTTER.

While the market has shown the same firm tone as preceding week, the medium and lower grades sold to relatively best advantage, not being in large supply, and were in good request in consequence of the absence of packed descriptions. The market throughout showed excellent condition, much better than ordinarily experienced at this time of year.

Creamery, extras, ½ lb.....	27 @28
Creamery, firsts.....	25 @26
Creamery, seconds.....	@—
Dairy, select.....	26 @—
Dairy, firsts.....	23 @25
Dairy, seconds.....	17 @—
Mixed store.....	13 @15
Creamery in tubs.....	@—
Pickled Roll, ½ lb.....	@—
Firkin, California, choice to select.....	@—
Firkin, common to fair.....	@—

## CHEESE.

Mild new of high grade is in limited supply and is being favored with a firm market. Favorite marks are going to special custom at an advance on regular quotations. Common qualities of both old and new are moving slowly, with market for same inclining in favor of the buying interest.

California, fancy flat, new.....	11¼@12
California, good to choice.....	10¼@11¼
California, fair to good.....	10 @10¼
California, "Young Americas".....	10 @12¼

## EGGS.

Prices have ruled a little lower than preceding week, having been marked



down sufficiently to enable retailers to sell at 25c per dozen. The demand at the easier figures was sufficiently brisk to prevent any serious accumulations. Some eggs are being shipped to British Columbia and also to points eastward in the near territories.

California, select, large, white and fresh.	21	@22
California, select, irregular color & size.	20	@21
California, good to choice store.	19	@20
California, common to fair store.	—	@—
Eastern, good to choice.	—	@—
Cold Storage.	—	@—

#### VEGETABLES.

Most kinds continued in light receipt, especially fresh vegetables, desirable qualities of the latter bringing as a rule good figures. Some Asparagus arrived from Sacramento section, No. 1 commanding up to 30c per pound, while No. 2 went at about 15c. Tomatoes and Rhubarb showing prime to choice condition brought comparatively stiff prices. Peas were in better supply and market easier for same than last quoted. Onions were in light demand and inclined in favor of buyers.

Beans, String, # lb.	12 1/2	@ 15
Beans, Wax, # lb.	—	@ —
Cabbage, choice garden, # 100 lbs.	50	@ —
Cauliflower, # dozen.	—	@ —
Cucumbers, Bay, # large box.	—	@ —
Egg Plant, Los Angeles, # lb.	20	@ 25
Garlic, # lb.	1 1/2	@ 2 1/2
Mushrooms, # lb.	8	@ 12 1/2
Onions, Yellow Danver, # cental.	2 00	@ 2 50
Peas, Sweet garden, # lb.	6	@ 9
Peppers, Green, Los Angeles, # lb.	20	@ 25
Peppers, Bell, # box.	—	@ —
Rhubarb, # lb.	8	@ 10
Squash, Marrowfat, # ton.	7 00	@ 10 00
Summer Squash, # box.	1 75	@ 2 00
Tomatoes, Los Angeles, # box.	1 75	@ 3 00

#### POTATOES.

The market remains in all essential respects the same as previously quoted. Spot supplies are tolerably heavy and are moving very slowly. Calculating on the basis of recent movement, it is estimated that there are now enough potatoes in this center to satisfy all probable requirements until new crop comes upon the market. In addition, large quantities are still being held at various points of production in the interior of this State and at coastwise points. Sweet potatoes were in fair request, and market for choice was moderately firm at the rates quoted.

Burbanks, Salinas, # 100 lbs.	1 40	@ 1 85
River Burbanks in sacks, # cental.	1 15	@ 1 35
Petaluma and Tomales Burbanks.	1 25	@ 1 50
Oregon Burbanks.	1 30	@ 1 70
River Reds.	1 30	@ 1 50
Sweets, Merced, # cental.	1 50	@ —

#### The Fruit Market.

##### FRESH FRUITS.

The market is rather lightly stocked

with Apples, and in the deciduous line there is no other fresh fruit now offering. Choice to select Apples are in good request and are salable to decided advantage. For fancy 4-tier stock a moderate advance on extreme quotation might be realized in a jobbing way. Lower grades are not eagerly sought after, and as a rule have to go at comparatively low figures, especially where prompt wholesale custom is desired. Strawberries of fine quality for the first of the season arrived yesterday from Santa Barbara.

Apples, fancy, # 4-tier box.	1 75	@ 2 00
Apples, good to choice, # 50-lb. box.	1 00	@ 1 50
Apples, common to fair, # 50-lb. box.	50	@ 75

#### DRIED FRUITS.

The market has been rather quiet since last review for dried and evaporated fruits, but fully as much business is being transacted as could well be expected, considering the limited supplies, and the generally firm views entertained by holders of desirable qualities. Apples tend in favor of the selling interest, and although not quotably higher, free purchases could not be effected at this date without paying stiffer figures than are warranted as quotations. Even at an advance, no heavy quantities could be secured, for the substantial reason that the fruit is not in stock, either here or in the interior. This remark may be said to apply with equal force to Apricots and Pears of desirable qualities, neither variety being now obtainable in anything like wholesale quantity. Plums made a moderate showing in the hands of jobbers, but stocks are not of sufficient magnitude to warrant holders displaying any uneasiness. Buyers in search of prime to choice stock find it necessary to pay full current rates. Peaches are perhaps in better supply than any other single variety except Prunes, but stocks of Peaches cannot be termed heavy, and being mainly in few and strong hands, are being very steadily held. There is no evidence of any active inquiry for Prunes from jobbers or small dealers, but values appear to be fairly well sustained at previously quoted range, although transfers of 1901 stock at anything over 3 1/2c basis for the four sizes is probably at the moment the exception in a regular wholesale way or for carload lots. Old Prunes are still in fair supply, but are all out of growers' hands and are reported being steadily held on the 2 1/2 @ 3c basis for the four sizes.

##### EVAPORATED OR BLEACHED.

Apricots, Royal, choice, in sacks, # lb.	9	@ 9 1/2
Apricots, Moorpark.	10	@ 12
Apples, in 50-lb boxes, rings, pressed, fancy.	8	@ 8 1/2
Apples, 50-lb boxes, rings, pressed, good to choice.	6 1/2	@ 7 1/2
Nectarines, # lb.	5	@ 6
Peaches, unpeeled, fancy.	8	@ 9
Peaches, unpeeled, choice.	6 1/2	@ 7 1/2
Peaches, peeled, in boxes.	12	@ 14
Pears, halves, choice to fancy.	6 1/2	@ 8 1/2
Plums, Red and Black, pitted.	5 1/2	@ 6 1/2
Plums, White and Yellow.	5 1/2	@ 6 1/2
Prunes, 4 sizes, in bags, 3 1/4 @ 3 1/2c; 50-60s, 4 1/4 @ 4 1/2c; 60-70s, 4 @ 4 1/4c; 70-80s, 3 1/4 @ 3 1/2c; 80-90s, 3 @ 3 1/2c; 90-100s, 3c @ —; these figures for 1901 crop.		

##### COMMON SUN-DRIED.

Apples, sliced.	3	@ 5
Apples, quartered.	3 1/2	@ 4 1/2
Peaches, unpeeled.	5	@ 6 1/2
Pears, prime halves.	5	@ 5 1/2
Plums, unpitted, # lb.	1 1/2	@ 2 1/2

#### RAISINS.

There are few Raisins of any sort now offering, and while inquiry is not active at the prices now generally demanded, buyers find it necessary in most instances to pay full current figures. Firmness is especially pronounced on Loose Muscatels and Seeded Raisins. Stocks of Layer Raisins are practically exhausted. Seedless Raisins are offering in a limited way at slightly easier figures than lately quoted.

Following are the prices for 1901 crop in carload lots:

Loose Muscatels—	Per lb.
4-crown.	6 1/2
3-crown.	6
2-crown.	5 1/2
Seedless Muscatels.	5 1/2
Seedless Sultanias.	5 1/2
Thompson's Seedless.	6 1/2
Seeded—	
3-crown, 1-lb. carton.	7 1/2 @ 8
2-crown, 1-lb. carton.	6 1/2 @ 6 1/2
London Layers, 20-lb. boxes—	
2-crown.	—
3-crown.	—

#### CITRUS FRUITS.

Choice to select Navels are in very light supply and in good request, with market decidedly firm. Oranges of common and defective quality are plentiful and slow of sale at a low range of values. Lemons are without quotable change. Inquiry is not brisk and is mainly for best stock. Lime market has ruled quiet but steady.

Oranges—Navels, # box.	1 25	@ 2 75
Seedlings, # box.	75	@ 1 25
Lemons—California, select, # box.	2 25	@ 2 50
California, good to choice.	1 50	@ 2 00
California, common to fair.	75	@ 1 25
Grape Fruit, # box.	1 00	@ 2 25
Limes—Mexican, # box.	4 00	@ 5 00

#### NUTS.

Supplies of both Almonds and Walnuts are light. Business is not brisk, but values remain steady. Peanuts are without quotable change.

California Almonds, shelled.	15	@ 18
California Almonds, paper shell, # lb.	10	@ 13
California Almonds, soft shell.	8	@ 10
California Almonds, hard shell.	5	@ 6 1/2
Cal. White Walnuts, No. 1 soft shell.	9	@ 10
Cal. White Walnuts, No. 2 soft shell.	7	@ 8
Cal. White Walnuts, No. 1 hard shell.	8	@ 9
Cal. White Walnuts, No. 2 hard shell.	6	@ 7 1/2
Peanuts, California, fair to prime.	4 1/2	@ 5 1/2
Peanuts, Eastern, hand-picked.	5 1/2	@ 6
Pine Nuts.	5	@ 6

#### WINE.

Not much trading, so far as reported, in new wines. Values remain without appreciable change, so far as quotable rates are concerned, viz., 22 @ 26c per gallon for dry wines of last vintage. Dealers do not appear to be very eager at the moment to purchase at full current figures, and some assert that they would have no trouble in buying freely at about 24c per gallon for good red and white wines of 1901 vintage delivered here. A steamer sailing the past week for New York took as part cargo 255,465 gallons. Minor quantities have gone outward by sea during the week for various destinations.

#### Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.	205,349	4,411,433
Wheat, centals.	233,997	6,199,524
Barley, centals.	135,161	4,895,473
Oats, centals.	2,755	702,371
Corn, centals.	1,799	73,269
Rye, centals.	10,175	136,640
Beans, sacks.	9,336	574,225
Potatoes, sacks.	20,307	977,503
Onions, sacks.	1,328	156,187
Hay, tons.	2,629	98,251
Wool, bales.	302	43,125
Hops, bales.	117	7,386

#### EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.	99,725	3,202,586
Wheat, centals.	273,611	5,665,594
Barley, centals.	75,669	3,667,139
Oats, centals.	—	2,153
Corn, centals.	95	8,907
Beans, sacks.	56	19,660
Hay, bales.	—	10,532
Wool, pounds.	—	545,331
Hops, pounds.	—	468,562
Honey, cases.	13	5,605
Potatoes, pack's.	88	39,486

#### California Dried Fruit at New York.

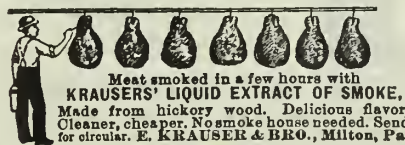
NEW YORK, Feb. 12.—Evaporated apples, common, 7 @ 8 1/2c; prime wire tray, 9 1/4 @ 9 1/2c; choice, 9 1/2 @ 10c; fancy, 10 1/4 @ 11c.

California Dried Fruits.—Market moderately firm at quotably unchanged values, with trade of fair proportions.

Prunes, 3 1/2 @ 6 1/2c.  
Apricots, Royal, 9 1/2 @ 13c; Moorpark, 10 @ 14c.  
Peaches, unpeeled, 7 1/2 @ 10c; peeled, 14 @ 18c.

#### Separator Capacity.

In the advertisement of the Reid Hand Separator printed in this issue the capacity should be given at 150 to 500 pounds of milk per hour, and not 350 pounds for the outside figure.



#### SAVE THE CALVES.

Scours is a troublesome disease among young animals, and particularly among calves. A reliable remedy is therefore of considerable value. Alexander's Scour Cure has been very successfully used during the last three years, and is strongly recommended by a number of well-known stock raisers. Our old friends, the Pasteur Vaccine Company, are selling agents for Alexander's Scour Cure, and their advertisement will be found in another column. The remedy is cheap, and every stock raiser should buy a bottle, or see that his dealer has some in stock ready for immediate use when required. The Pasteur Vaccine Company will upon request, send interesting literature with a long list of valuable endorsements. The Pasteur Vaccine Company also furnishes "Blacklegline" both for single and double treatment, "Blacklegline" being Pasteur Blackleg Vaccine ready for use as sold.

# PATENTS

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# Live and Dressed Turkeys Wanted.

Drop us a postal, we will give you the correct market on Turkeys at any time. If correct weights, prompt returns, and the highest market rates are what you want, try us.

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## SAVE \$10.- PER COW

EVERY YEAR OF USE.

DE LAVAL CREAM SEPARATORS.

Prices \$50.- TO \$800.-

"Alpha" and "Baby" styles. Send for Catalogue  
THE DE LAVAL SEPARATOR CO.  
Randolph & Canal Sts., | 74 Cortlandt Street,  
CHICAGO. NEW YORK.  
103-105 MISSION STREET,  
SAN FRANCISCO, CAL.

## FRUIT MARKETING.

### Clean-up of the Prunes.

Just after our last issue went to press the announcement was made from San Jose that the last pounds of the prune crop of 1900 was disposed of, when 200 carloads were sold to the J. K. Armsby Company. This is a complete clean-up of the carry-over crop, thus leaving the Association without one ounce of that immense crop.

The crop of prunes in the State for 1900 was anywhere from 160,000,000 to 175,000,000 pounds and to dispose of this tremendous tonnage of fruit became a problem. Out of the total yield of 1900 there were delivered to the Association the enormous total of 126,000,000 pounds, some 50,000,000 pounds more than the annual consumption of the entire country.

Some of the fruit was necessarily carried over. Not only was the prune crop of unheard of proportions in this State, but it was unusually large in Europe. In addition to this there was that season a large crop of all other kinds of fruit in America. When the crop of 1901 was ripe there were still many million pounds of prunes of the old crop in the State, the Association having between 50,000,000 and 75,000,000 pounds. The yield of 1901 was only about 55,000,000 pounds, yet the carry-over had to be marketed in the face of this.

This is the second large purchase of prunes made by the J. K. Armsby Company this winter. In December the company bought from the Association 200 carloads, and now makes this purchase of 200 carloads more, a total purchase by this firm of 400 cars from the growers' combine.

This is the largest sale of prunes

At the First Sign of a cramp or other pain in the bowels take Perry Davis' Painkiller in hot water, sweetened and you have mastered the difficulty. There is but one Painkiller, Perry Davis'. 25 and 50c.

1. \$2300 buys 65 acres choice sandy land, on railroad, 6 miles from Merced. Cal. Depot on land. Don't wait for your hat if you want a bargain.
2. \$1600 buys nicely improved 10-acre ranch with plenty of fruit and free water, only 4 miles from Merced.
3. 9-acre ranch, nicely improved, very rich land, only 1 mile from town. Price low for quick sale. Address E. M. MILLS, Merced, Cal.

## Cash Buyers for Farms

or other real estate may be found through me, no matter where located. Send description and price and learn my successful method for finding buyers. W. M. OSTRANDER, North American Building, Philadelphia, Pa.

## ASK FOR SNOW'S GRAFTING WAX.

IN USE ALL OVER THE STATE.

WRITE FOR PRICES.

Address D. A. SNOW,  
LINCOLN AVENUE.....SAN JOSE, CAL.

## FERTILIZERS.

We carry the largest and most complete stock of Fertilizers on the coast.

Nitrate of Soda,  
Sulphate of Ammonia,  
Tankages,  
Fish Scrap,  
Steamed Bone Meal,  
Dissolved Bone Meal,  
Thomas' Phosphate Powder,  
Superphosphate,  
Double Superphosphate,  
Sulphate of Potash,  
Muriate of Potash,  
Kainit, etc., etc.

Also Mixed Fertilizers of every description. We guarantee all our goods. Get our prices before ordering.

N. OHLANDT & CO.,

Indiana and 24th Sts., San Francisco, Cal.

ever made in the history of the State to one firm, reaching as it does the enormous total of 12,000,000 pounds. It would take twenty locomotives pulling solid trains of twenty cars each to remove the fruit East.

But little fruit is now left in the hands of the Association, and what there is, is of the crop of last year. This is being sold steadily and any day now may see the last pound disposed of. The demand for fruit the last few days has been good.

The price received for the 200 cars sold to the J. K. Armsby Company was not made public, but gossip had it that it was shaded but little, if any, from the 2-cent basis price for the carry-over fruit.

No official announcement has yet been made as to when the next dividend will be paid, but it is said that this will be at the earliest possible moment, and that is not long off.

The sale of the fruit and the payment of the dividends to the members will intensify the question of the fate of the Association. Various suggestions and expressions are heard. Time will no doubt develop the fact.



**Soft Harness**

You can make your harness as soft as a glove and as tough as wire by using EUREKA Harness Oil. You can lengthen its life—make it last twice as long as it ordinarily would.

**EUREKA Harness Oil**

makes a poor looking harness like new. Made of pure, heavy bodied oil, especially prepared to withstand the weather.

Sold everywhere in cans—all sizes.

Made by STANDARD OIL CO.

## THE "BOSS" TREE PROTECTOR.

Made of Yucca Palm.



Is cheaper, more durable, and quicker put on than anything. It prevents Rabbits from destroying your trees. A sure protection against frost, sunburn, grasshoppers or dry winds. Can be easily removed; will last for years. Send for samples.

### PRICES:

12 inches long,	\$ 9.00 per 1000.
14 " "	10.00 " "
16 " "	11.25 " "
18 " "	12.50 " "
24 " "	15.00 " "
30 " "	17.50 " "

Agents Wanted Everywhere.

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## Nitrate of Soda FOR Money Crops.

**Sugar Beets,  
Oats, Wheat,  
Grass, Rye,  
Corn, Fruit.**

You GET YOUR SHARE OF PROFIT when you use this ideal predigested Ammoniate as plant food.

For list of dealers, formulas and other valuable information, write

**WILLIAM S. MYERS, Director,**  
CHILEAN NITRATE WORKS,  
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## Sharples "Tubular" Dairy Separators.

Greatest Step Ever Made In Advanced Cream Separator Construction.  
If cost more, are worth double, for they produce enough more butter than the best competing separator to pay fully 6 per cent interest on whole first cost of machine.  
We Absolutely Warrant It and Give Free Trial to Prove It.  
Also very light running, a 600 lb. machine turning easier than other 300 lb. machines. No disks to bother with and get out of order. No complications.  
If you want to know about all different separators, send us for a copy of "The Separator," containing an expert opinion on them, together with free Catalog No. 131.  
Sharples Co., Chicago, Ill. P. M. Sharples, West Chester, Pa.

## THE U. S. SEPARATOR DOES PERFECT WORK

MISS. AGRICULTURAL AND MECH. COLLEGE.  
AGRICULTURAL COLL. MISS.  
Dec. 31, 1901.  
The Separator (U. S.) has done perfect work.  
J. S. MOORE, Acting Instructor.

REMEMBER IT RECEIVED  
**HIGHEST AWARD**  
At Pan-American Exposition, 1901  
Buy the U. S. and have the Best

"The Kind That Gets All the Cream."

VT. FARM MACHINE CO., BELLONS FALLS, VT.

## MAMMOTH BLACKBERRY.

PROLIFIC. POPULAR. PROFITABLE. ORIGINATED HERE.

Produced \$400 worth of fruit on 1/4 acre (Emerson Tract) in 1901. Plants ready Feb. 1st.  
Rooted Tips, 12 for \$1; 100 for \$6; 1000 for \$50.  
By Freight or Express.

## YORK IMPERIAL APPLE TREES.

4 to 6 ft. \$12 per 100.

Refer to City Bank, Santa Cruz.

HENRY SHAW, 320 River Street, SANTA CRUZ, CAL.

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For The Farmer The Gardener and The Housewife

They cost a little more. They are worth a great deal more than the ordinary kind. Sold everywhere. 1902 annual free.

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For Citrus Trees, or Deciduous Trees, or Nut Trees, or Ornamental Trees, Shrubs, or Flowering Plants, WRITE US.

OUR	Grafted Walnuts,	-	10c per foot
LEADERS	Royal Apricots, 4 to 6 ft.		
		\$12.50	" 100
	Muir Peaches, 4 to 6 ft.	\$15	" 100
	Bartlett Pears, 4 to 6 ft.	\$15	" 100
NOW.	Apples, 4 to 6 ft.	- \$10	" 100
	Apples, 3 to 4 ft.	- \$7	" 100

GET OUR PRICES BEFORE BUYING  
POSTAL GETS PRICE LIST.  
**RICHMAN & MILLS, Props.**  
FULLERTON, CALIFORNIA.

HOUSE TO HOUSE agents can secure a new line of novelties; profit 300 per cent. The hottest sellers on the market. Any live agent can make \$4 per day. Do you want a good business? No talking; no experience; get our circulars; make a money start. H. S. GROVES, Lompoc, California.

## Seeds, Plants, Etc.

A limited number of the following varieties of GRAPE CUTTINGS FOR SALE:

Alicante Bouschet, Berger, Zinfandel, Cabernet Franc, Mondeuse, Black Burgundy, Trousseau.

These Cuttings are suitable for Rooting or Grafting. Prices on application.  
MRS. G. R. UPHAM, MARTINEZ, CAL.

## Rupestris Martin Cuttings.

First Grade, 18 in. long, \$10 per 1000.  
Second Grade, 14 in. long, \$5 per 1000.

SUGAR PRUNE Grafting Wood at 2 1/2c. per foot.

HAL G. OSBURN, LOS GATOS, CAL.

## Sugar Prune and Cling Peach Trees for Sale.

I have the largest stock of Sugar Prune trees for sale in the State. Grafting wood in quantities. Send for my descriptive catalogue.

C. W. REED, Mills Building, San Francisco, Cal.

## Fruit and Ornamental Shade Trees.

ORANGES, OLIVES, PALMS, ROSES, ETC. SEEDS.

Rye Grass, Alfalfa, Vegetable and Flower Seeds. Agent for the California Nursery Co.

THOS. MEHERIN, 520 Battery St., San Francisco.

## SOFT-SHELLED ENGLISH WALNUT TREES FOR SALE.

Also, About 4000 Seedling Orange Trees for Nursery Stock, well rooted and some on dormant buds.

All to be sold at a bargain, as party is going out of nursery business. Address KASPEN VOGT, Oakdale, Cal.

## FRUIT, ORNAMENTAL, EVERGREEN, SHADE TREES

and FLOWERING SHRUBS.

Blue Gum, Monterey Cypress and Monterey Pine, transplanted in boxes.

A New Apple Tree—the Danish Gravenstein, specially adapted to the Pacific Coast.

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## BLUE GUMS, RED GUMS, MONTEREY CYPRESS,

FOR SALE IN LOTS TO SUIT.

Write for prices, stating quantity, delivered on wharf in San Francisco.

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## FOR SALE. Choice Rooted LOGAN BERRY Plants,

FRESH FROM FIELD NURSERY.

Address M. J. KERWIN, SAN LEANDRO, CAL.

## LOGANBERRIES.

If you want the best plants grown and at reasonable prices, write to

Rural Box 61. W. J. EMBREE,

EL MONTE, LOS ANGELES CO., CAL.

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APPLE AND BARTLETT PEAR

One year old, 5 to 7 feet, grown on whole roots. NO FINER STOCK.

Loganberry and Himalaya Giant Blackberry.

One-year-old vines and rooted tips.

R. P. EACHUS, LAKEPORT, CALIFORNIA.

## FORESTVILLE NURSERIES.

## SURPLUS STOCK:

450 Y. N. Pippin..... } No. 1  
220 Y. Beilflower..... } Trees,  
And small assortment of other kinds. } 10c.  
100 Royal 'Cots'..... } 10, 12 1/2, 15c. Good Trees.  
50 Blenheim..... }  
80 Sugar Prune on Myrobalan, 10 and 15c.  
120 Phillips Cling, well rooted bnt small..... } 12 1/2c.  
30 Triumph Peach..... } 15c.  
225 Climax P um..... } 10 and 15c.  
120 Claiac Prunes, small..... } 10c.  
200 English Gooseberries..... } 4c.  
600 Thompson's Seedless and Muscat }  
Grapes..... } 3c.  
Small quantities of other varieties.

T. J. TRUE, FORESTVILLE, CAL.

## Loganberry Rooted Tips.

PRICE, 2 CTS. EACH.  
For Sale by T. E. BARLOW, Sebastopol, Cal.



## Seeds, Plants, Etc.

### COX SEED CO.,

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**LARGEST ASSORTMENT OF  
SEEDS ON THE COAST.**

Alfalfa, Clover, Brome Grass, Australian Rye Grass, Garden and Flower Seeds.  
Ornamental Trees, Roses, Fruit Trees and Small Fruits. French Prune on Myrobalan Root, Blenheim and Royal Apricots on Peach Root.  
Muir Peaches.  
Almonds—1 X L, Nonparel and Ne Plus Ultra  
Apples—Yellow Newtown Pippin and Be Hflower.  
Pear—Bartlett.  
Sugar Prune.  
Mammoth Blackberry.

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Send right away for  
NEW CATALOGUE

just off the press and the best I've ever seen; 36 pages and high art cover. Shows more and tells more about successful Citrus Tree planting than any similar book. Describes different sorts; tells where to plant and why; shows best methods of planting and caring for each variety. Sent FREE if you mention this paper.

R. M. TEAGUE, Prop.

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San Dimas, California.

## THE Tilton Apricot

Is 15 years old. It bore fruit at 3, and has borne for 12 successive years. It is half as large again as the Royal, with better flavor, color, and dries heavier.

For better information, send for circulars.

**Hanford Nurseries,**  
J. W. BAIRSTOW.

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Office, 3041 Baker St., San Francisco, Cal.  
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**LARGE STOCK OF EARLY CRAWFORD  
AND MUIR PEACHES.**

**PALMS. ROSES.**

**Evergreen and Deciduous Trees.**

**ORNAMENTAL TREES AND  
FLOWERING SHRUBS**

Send for Descriptive Catalogue and Price List.

**F. LUDEMANN.**

### Commercial ORCHARD TREES.

We have all the well tested and tried varieties in Fruit Trees and Vines, also many new sorts of merit, including Smyrna Figs, Grafted Walnuts, Improved Japanese Persimmons and Loquats, Loganberry and Mammoth Blackberry Plants, Orange and Lemon Trees.

**D. H. LENOX, Nurseryman,**  
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**FOR SALE.**

**Mazzard Cherry Seedlings.**

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### 150 Kinds for 16c.

It is a fact that Salzer's vegetable and flower seeds are found in more gardens and on more farms than any other in America. There is reason for this. We own and operate over 500 acres for the production of our choice seeds. In order to induce you to try them we make the following unprecedented offer:

**For 16 Cents Postpaid**

20 kinds of rarest luscious radishes,  
12 magnificent earliest melons,  
16 sorts glorious tomatoes,  
25 peerless lettuce varieties,  
12 splendid best sorts,

65 gorgeously beautiful flower seeds,  
in all 150 kinds positively furnishing bushels of charming flowers and lots and lots of choice vegetables, together with our great catalogue telling all about Teasdale and Pea Oat and Bronus and Speltz, onion seed at 6c. a pound, etc., all only for 16c. in stamps. Write to-day.

**JOHN A. SALZER SEED CO.,**  
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## FRUIT TREES.

**CLING PEACHES:**

CALIFORNIA GOLDEN, LEVY'S LATE,  
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SELLER'S and TUSCAN.

### Sugar Prune Trees.

**ALMONDS:**

1 X L, NE PLUS ULTRA and NONPAREL.

**PLUMS and PRUNES:**

BARTLETT, BURBANK, CLIMAX, SULTAN,  
IMPERIAL, TRAGEDY and WICKSON.

### Bartlett Pear Trees.

**TRUMBULL & BEEBE,**

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AGENTS FOR C. W. REED'S NURSERIES,  
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## OREGON NURSERY CO.

THE LARGEST SAFEST & MOST RELIABLE  
SALEM, OREGON  
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50,000 Apricot on apricot root in our nurseries at Santa Paula, California.

Immense stocks of apple pear, plum, peach and apricot in our Salem, Oregon, nurseries.

Oranges and lemons in our nurseries at Santa Paula, Los Angeles and Pomona, California.

Our trees are celebrated for their perfect system of roots. The best rooted trees in the world. Buy the best trees—our trees; they are cheapest in the end.

Our catalog and price list free if you mention this paper.

CALIFORNIA HEADQUARTERS  
SACRAMENTO, CALIF.



### GENERAL ASSORTMENT —OF—

## FRUIT TREES.

**SUGAR PRUNES on Plum Root,**  
5 to 7 feet high, \$15 per 100, \$140 per 1000.

**Muir Peaches, Bartlett Pears,  
Climax Plum and Almond  
Trees All No. 1 Trees.**

—LET ME KNOW YOUR WANTS.—

**J. T. BOGUE, MARYSVILLE, CAL.**

MAY'S SEEDS ARE BEST. L. L. May & Co.,  
St. Paul, Minn.



## Calimyrna Figs

INTRODUCED BY THE

### Fancher Creek Nurseries.

Trees of this famous variety for sale in quantities. Write us for full information regarding this—the grandest of all California fruits. Trees produce revenue in four years; large income in ten years. Most favorable conditions in southern California for producing clean, vigorous, healthy stock. "Personally conducted" from budding to shipping.

**PEACHES**—Muir, Lovell, Elberta, Wheatland, Phillip's Cling, Orange Cling.

**PRUNES**—Both French and Sugar Varieties.

**PEARS**—Bartlett, the pear of all pears.

**APRICOTS**—Finest in the State.

**WASHINGTON NAVELS, LEMONS and POMELOS.**  
The finest lot that ever came from the frostless belt of Tulare county. Thrifty and healthy.

**GRAPE VINES**  
on their own roots. Strong, healthy and vigorous.

**FULL-GROWN ROSES**  
of every variety. In fact, everything.

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## FRESNO NURSERY.

ESTABLISHED IN 1888

320 Acres in Orchard, Vineyard and Nursery.

### 300,000 Yearling Trees

Of the Leading Varieties: PEACH, PEAR, APRICOT, APPLE, ALMOND, NECTARINE, PRUNE, PLUM, CHERRY, Etc. All My Own Raising.

Large Stock of Leading Varieties of Wine, Table and Raisin Grape Roots.

Resistant Varieties: RIPARIA, LENOIR and RUPESTRIS ST. GEORGE.

**PALMS, ROSES, SHADE TREES, ETC.**

—WRITE FOR PRICE LIST AND CATALOGUE.—

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## PAJARO VALLEY NURSERY.

ESTABLISHED IN 1865

### 80 Acres in Nursery.

ALL THE LEADING VARIETIES OF ALL KINDS OF

### Fruit Trees, & Small Fruits, Ornamental Trees, Roses, Etc.

INTRODUCER OF THE GENUINE MAMMOTH BLACKBERRY.

LARGE STOCK OF ONE-YEAR-OLD PLANTS.

Send for Price List and Catalogue.

**JAMES WATERS, Prop., WATSONVILLE, CAL.**

Established 1878.

### NAPA VALLEY NURSERIES.

### DECIDUOUS, CITRUS, ORNAMENTAL TREES, GRAPE VINES.

Specialty of BENCH GRAFTING on Resistant Stock.

Write for price list and booklet on fully tested Resistant Vines.

We have grown 150% in three years.

**JOHN AMES, Prop., NAPA, CAL.**

ESTABLISHED 1876.

NO IRRIGATION.

## SANTA ROSA NURSERIES.

**W. H. SCHIEFFER & CO., Proprietors.** Successors to R. W. BELL.  
THE LEADING NURSERYMEN OF NORTHERN CALIFORNIA.

808 TUPPER ST., SANTA ROSA, CAL. WRITE FOR PRICE LIST.

## Rocky Ford Cantaloupes and Watermelons are Famous!

I won STATE PREMIUM on them last fall. TRUCKERS buy your seeds direct from the grower and get my thoroughbred PEDIGREED strain and your crop will please you. Write today for valuable catalogue which tells how to Plant and Cultivate Melons, gives photographs to illustrate, and describes and prices the BEST SEEDS of all kinds for all who grow a garden.

**D. V. BURRELL'S ROCKY FORD SEED HOUSE, ROCKY FORD, COLORADO.**



### Hopelessness of the Silk Business.

There are still those who now and then start confidently into silk culture, though all our experience has been against any profit in it. The following aspect of the matter is given in the Los Angeles Herald on the basis of an interview:

"I would like to see the silk of commerce produced from the cocoon in the United States, but under present conditions it seems to me utterly impracticable," said L. O. Smith yesterday at the Angelus.

Mr. Smith is vice-president of the Brainerd & Armstrong Co., silk importers and manufacturers of Philadelphia, and his statement was made in answer to a question as to the feasibility of the plan for establishing silk culture in this country.

This matter has been recently agitated by some zealous and public-spirited women in Los Angeles and vicinity. There are those who believe the work of preparing silk fiber for the manufacturer can be conducted successfully in America. Mr. Smith said:

"While I, as well as others interested in the manufacture of silk goods, am anxious that silk culture may be successfully carried on in this country, I am afraid the difficulties to be surmounted before success can be achieved are too great to be overcome with the means now at hand or in sight. I am naturally solicitous in the matter, because as a purchaser of raw material I am anxious that the supply be increased as near home as possible, to lessen hazard and cost of transportation, as well as time, and also because we all like to believe nothing impossible in America.

"Yes, indeed, we go too far in preparing for this culture. We want to know something about it, and some of the difficulties that have been met and are still in existence. The Woman's Silk Culture Association of Philadelphia for several years endeavored to develop silk culture in this country. They did start a number of people in a small way in the production of silk. While there is really no reason why we can not produce in this country as fine a quality of silk as is produced in the world, there are stubborn reasons why silk culture can not be made a financial success at present.

"If I were to state briefly and to the point why silk culture could not be carried on successfully in this country, I would illustrate it by this statement: If the largest storehouses in Los Angeles were to be filled with cocoons and presented to some one wishing to

go into the business, the cocoons could not be unreeling by any known process in this country without costing more in labor than an equal quantity of silk could be bought for in China. In other words, the cost of labor to unreel cocoons in this country is more than the cost of the silk already reeled that we purchase in China or Japan. The fact is that the wages paid for reeling in China or Japan amount to only a few cents per pound. There is no known method of unreeling the cocoons that is either faster or cheaper than it can be done by hand. Our labor here, worth \$1 to \$2 per day, can not unreel any more cocoons than the labor of China or Japan that costs only a few pennies per day. So far the problem as to how to lessen the labor of reeling silk from cocoons has defied and baffled invention. It is purely a physical problem.

"Owing to these facts, learned by one through actual experience, the Woman's Silk Culture Association of Philadelphia, after giving several years to the endeavor to build up the business, had to abandon it."

"A Little Cold, You Know," will become a great danger if it be allowed to reach down from the throat to the lungs. Nip the peril in the bud with Allen's Lung Balsam, a sure remedy containing no opium.

### New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING JANUARY 28, 1902.

- 692,190.—DISK PLOW—A. S. Bailey, Lovelock, Nev.
- 692,001.—RAISING SUNKEN VESSELS—J. Barker, Seattle, Wash.
- 692,108.—HANDLING TAILINGS—H. W. Blaisdell, Yuma, Ariz.
- 692,004.—SWITCHBOARD PLUG—C. F. Butte, S. F.
- 692,005.—ELECTRIC SWITCH—C. F. Butte, S. F.
- 692,196.—PLANT THINNER—A. Esplanosa, Ventura, Cal.
- 692,183.—LINOTYPE MOLD—M. P. Freebey, Los Angeles, Cal.
- 691,758.—HOSE NOZZLE—G. L. Gay, Spokane, Wash.
- 691,857.—FOOT HEEL—M. L. Hansen, Oakland, Cal.
- 692,011.—CEREAL POLISHER—M. Hansen, Livermore, Cal.
- 691,860.—PRINTING PRESS—Hayes & Hemphill, Los Angeles, Cal.
- 692,140.—NECKTIE FASTENER—E. Klene, Spokane, Wash.
- 692,147.—ENTASISOGRAPH—G. Kimball, Pendleton, Or.
- 691,785.—DRAFT EQUALIZER—G. F. A. Labudde, Jr., Eureka, Wash.
- 692,057.—FISH TRAP—E. W. Livermore, New Whatcom, Wash.
- 692,160.—GARMENT SUPPORTER—Mahana & Robbins, Kelso, Wash.
- 691,955.—CARBURIZER—F. L. Martenette, Chico, Cal.
- 692,068.—LOCK AND LATCH—M. C. Patrick, Seattle, Wash.
- 692,030.—DREDGER—R. H. Postlethwaite, S. F.
- 691,811.—PRUNING SHEARS—Reed & Hakel, Hood River, Or.
- 692,031.—STEAM GENERATOR—G. H. Rheutan, S. F.
- 692,032.—STEAM GENERATOR—G. H. Rheutan, S. F.
- 692,055.—ELECTRIC SIGNAL—W. R. Stearns, Portland, Or.
- 691,985.—DRILL CHECK—W. Terry, Oakland, Cal.
- 691,827.—BEAM COMPASSES—G. Tucker, S. F.

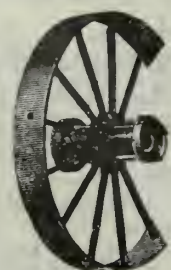
CURE YOUR COLD WITH R. Hall's Pulmonary Balsam.

Kentucky Grain Drills Plant the Wheat That Makes the Flour the People Eat. SEE AD IN THIS PAPER.

### Prune Dip.

"Greenbank" Pure 100% Caustic Potash and 98% Powd. Caustic Soda.

T. W. JACKSON & CO., Sole Agents, - No. 123 California Street, SAN FRANCISCO, CAL.



### STEEL WHEELS

—FOR—  
Farm Wagons.

28-30-32 and 34" Wheels with 4 and 5" Tires.

Make a Good Low Down Truck Out of Your Old

Wagon at a Good Low Down Price.

At BAKER & HAMILTON'S, San Francisco. Sacramento. Los Angeles.



We are the largest manufacturers of Steel Wheels and Truck Wagons in the World. Write for Catalogue. Havana (Ill.) Metal Wheel Co.

# Reductions

FOR FEBRUARY.

GOODS DEPENDABLE.

Sold under our regular guarantee, money back.

Net Cash, f. o. b. San Francisco.

SUGAR, very low—good time to buy—at date we offer	Lion coffee, roast, in packages, Rio stock	12 1/2
Spreckels' best dry granulated, 22 lbs for...	Roast coffee, fresh, bulk, fair but good...	15
100-lb sacks.....	TEA, mixed and splendid drinker, 5 lbs for	1 75
California dry granulated, 100 lb sacks.....	RICE, our No 2 table, very fair, 100 lbs for	4 50
HAMS, finest Eastern, 100 lbs for.....	CHOCOLATE, 3-lb tins, ground, for.....	70
ROLLED OATS, good and fresh, 90 lbs for.....	COCOA SHELLS, 10 lbs for.....	50
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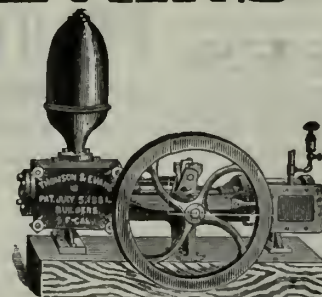
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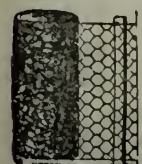
**HUGO**. REGISTERED NO. 9438. Weight 1800; bred by J. D. Patterson, Oxnard, Cal.; foaled April 18, 1895. Sire, Leopold 4250 by imp. Louis 3299; dam, Henrietta II 5779 by imp. Montebelle 3298; second dam, imp. Lady Henrietta I 2449.

**MARQUIS**. REGISTERED NO. 9017. Weight 1750; bred by J. D. Patterson, Oxnard, Cal.; foaled March 25, 1895. Sire, imp. Montebelle 3298 by Caesar; dam, imp. Maria I 2450 by Hercules.

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The owner, HON. JESSE D. CARR, Salinas, wants to sell them immediately. Is not in need of the money, but is getting too old (87) to keep on breeding Horses. Will sell one or more and will give any one a big bargain that will take them all. This is the best opportunity ever offered in California to get big values for money.

**Almeda C.**—Brown filly, foaled January, 1893. Sire, Gabilan; dam, Emma. Registered in Vol. 13, Rule 7, as standard. Bred to Boodie Jr.

**Delight**—Bay filly, foaled February 15, 1897. Sire, Engineer; dam, Flossie. No marks. Bred to Boodie Jr.

**Bertha**—Dark brown mare. Sire, Carr's Mambrino; dam, Emma. Has not foaled yet.

**Belle**—Black filly, foaled March 20, 1893. Sire, Alpheus Wilkes; dam, Lady Nelson. Bred to Boodie Jr.

**Trix**—Black filly, foaled April 20, 1899. Sire, Ecce; dam, Belle.

**Necessity**—Light bay filly, foaled February 22, 1897. Sire, Magenta; dam, Unique.

**Dora**—Bay filly, foaled April 2, 1890. Sire, Reno; dam, Martha. Bred to Major.

**Epha**—Bay filly, foaled April 24, 1892. Sire, Engineer; dam, Puss. Registered in Vol. XIII. Bred to Boodie Jr.

**Elsie**—Light bay filly, foaled March 25, 1895. Sire, Boodie; dam, Mary C. Bred to Nutwood Wilkes.

**Eda**—Chestnut sorrel filly, foaled April 19, 1895. Sire, Hambletonian Wilkes; dam, Gabilan Maid. Bred to Boodie Jr.

**Flossie**—Brown mare. Sire, Carr's Mambrino; dam, Gray Eagle mare brought from Kentucky. Vol. XIII. Bred to Boodie Jr.

**Gabilan Girl**—Brown filly, foaled April 8, 1892. Sire, Gabilan; dam, Clara. Vol. XIII. Bred to Major.

**Queen Bess**—Brown filly, foaled April 3, 1900. Sire, Boodie Jr.; dam, Gabilan Girl.

**Little Ora**—Brown filly, foaled March 17, 1897. Sire, Engineer; dam, Lilly B.

**Jane**—Bay mare. Sire, Carr's Mambrino; dam, Ballot Box. Bred to Major.

**Juanita**—Bay filly, foaled March 26, 1896. Sire, Bay Rum; dam, Lucky Girl. Bred to Boodie Jr.

**Kitty S.**—Sorrel filly, foaled April 22, 1900. Sire, Nutwood Wilkes; dam, Flossie.

**Flora**—Bay filly, foaled February 24, 1892. Sire, Reno; dam, Lady Palmer. Bred to Major.

**Fanchon**—Bay filly, foaled April 13, 1898. Sire, Ecce; dam, Jane.

**Lady Palmer**—Bay mare. Sire, Carr's Mambrino; first dam, by Luciana, he by Whipple Hambletonian. Vol. XIII, Rule 7. Bred to Major.

**Lilaine**—Bay filly, foaled March 23, 1894. Sire, Boodie; dam, Gabilan Maid. Vol. XIII, Rule VI. Bred to Nutwood Wilkes.

**Allegra**—Bay filly, foaled April 27, 1899. Sire, Ecce; dam, Jane.

**Martha**—Bay mare. Sire, Mambrino Jr.; dam, Gabilan Maid. Bred to Major.

**Uly B.**—Black mare (16 hands). Sire, Homer; dam, Maggie Lee. Registered as standard in Vol. VI. Bred to Major.

**Lucky Girl**—Bay filly, foaled May 24, 1899. Sire, Carr's Mambrino; dam, Flossie. Bred to Boodie Jr.

**Miss Jody**—Bay filly, foaled April 4, 1900. Sire, Boodie Jr.; dam, Jane.

**Nancy**—Bay mare. Sire, Mambrino Jr.; dam, Gabilan Maid. Bred to Boodie Jr.

**Peerless**—Bay filly, foaled April 5, 1891. Sire, Gabilan; dam, Jane. Bred to Major.

**Comfort**—Brown filly, foaled May 23, 1898. Sire, Magenta; dam, Janet.

**Surprise**—Brown mare. Sire, Abbotsford, son of Woodford Mambrino; first dam, Minnie by Ladd's Kentucky Hunter. Bred to Boodie Jr.

**Sansal Maid**—Dark brown filly, foaled January 8, 1892. Sire, Gabilan; dam, Flossie. Vol. XIII, Rule VI. Bred to Boodie Jr.

**Taddie J.**—Sorrel filly, foaled April 2, 1896. Sire, Bay Rum; dam, Mary C. Bred to Boodie Jr.

**Mary C.**—Bay mare, foaled April 8, 1898. Sire, Antevolo 7648; dam, Gabilan Maid. Bred to Boodie Jr.

**Ruby M.**—Bay filly, foaled March 28, 1898. Sire, Ecce; dam, Flora.

**Jenny Wren**—Bay filly, foaled April 21, 1900. Sire, Boodie Jr.; dam, Flora.

**Claire**—Bay filly, foaled May 10, 1899. Sire, Punch; dam, Lady St. Claire.

**Beatrice**—Chestnut sorrel filly, foaled April 20, 1900. Sire, Boodie Jr.; dam, Lady Comstock Jr.

**Ontario**—Bay filly, foaled April 21, 1898. Sire, Magenta; dam, Lucky Girl.

**Miss Nobody**—Gray filly, foaled March 21, 1897. Sire, Magenta; dam, Martha.

**Julia Dean**—Bay filly, foaled April 13, 1898. Sire, Ecce; dam, Martha.

**Pobrecita**—Black filly, foaled April 9, 1900. Sire, Boodie Jr.; dam, Martha.

**Helen Gould**—Bay filly, foaled March 29, 1900. Sire, Boodie Jr.; dam, Miss Beauty.

**Miss Nan**—Dark gray filly, foaled March 6, 1897. Sire, Magenta; dam, Nancy.

**Delta**—Dark bay filly, foaled March 21, 1900. Sire, Boodie Jr.; dam, Nancy.

**Queen Mab**—Sorrel filly, foaled April 11, 1900. Sire, Nutwood Wilkes; dam, Nina B.

**Little Dorrit**—Gray filly, foaled March 14, 1897. Sire, Magenta; dam, Rita V.

**Adelaide**—Dark gray filly, foaled February 20, 1897. Sire, Magenta; dam, Surprise.

**Evening Star**—Black filly, foaled March 28, 1898. Sire, Magenta; dam, Sansal Maid.

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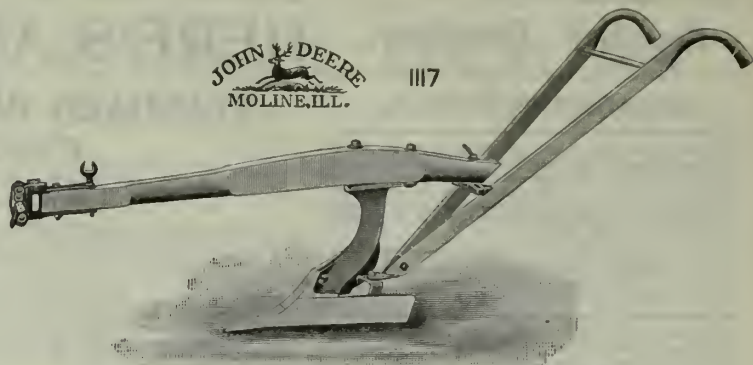
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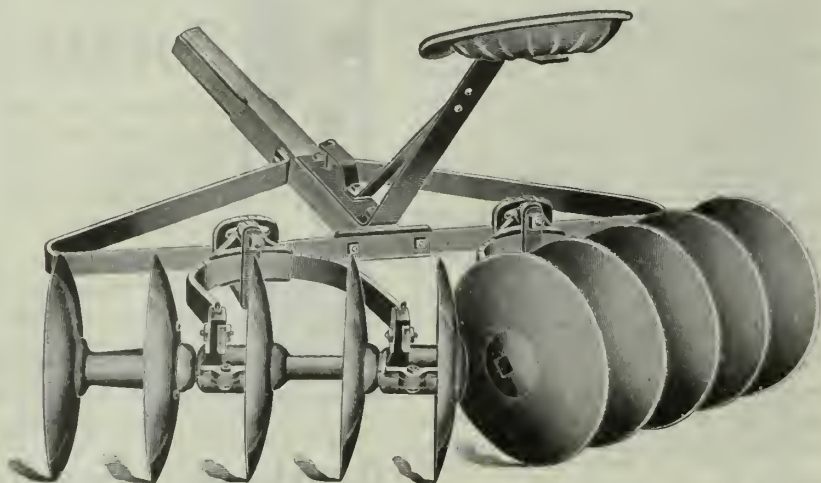
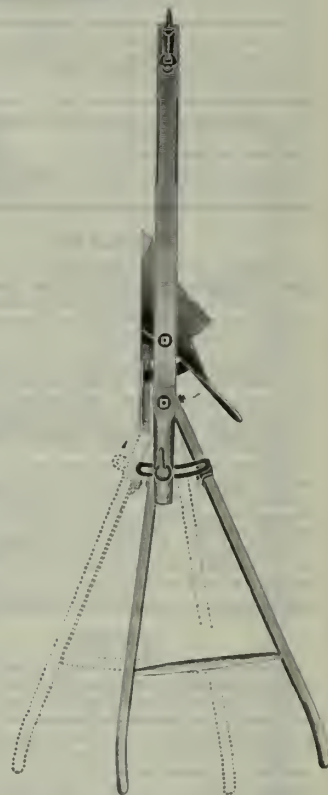
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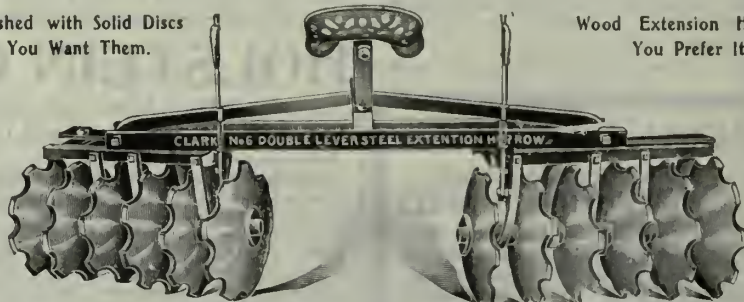
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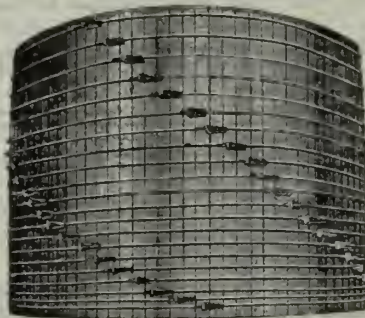
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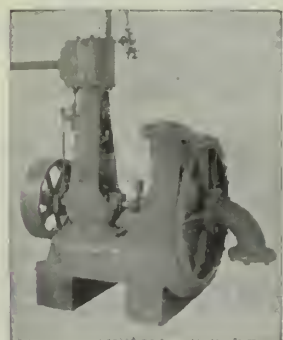
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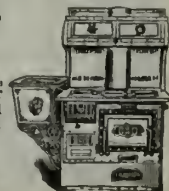
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# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 8.

SAN FRANCISCO, SATURDAY, FEBRUARY 22, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

### The Riverside Water Supply.

Riverside is an excellent exponent of what enterprise and capital can do to render natural resources of soil and climate effective in securing a vast volume of valuable products and resultant prosperity. Our engravings present some features of one of the three water systems which have made the Riverside of the present day possible and they are taken from the recent report of Prof. Elwood Mead, to which reference has already been made. It is a notable fact that Riverside during all the recent years of water shortage at the south has had an ample supply and has maintained her large orange product in the ascending series of annual outputs to which the increasing thousands of bearing trees make contribution.

The pioneers of Riverside organized the Riverside Water Company, taking water from the Santa Ana river. Though this supply has ever since served the oldest parts of the settlement, the newer extensions, which have surpassed in acreage their prototype, have secured their water supply from other sources and have shown an amount of insight, energy and confidence which could not have been commanded at the beginning. Thus Riverside has not only taught the newer irrigated districts the secrets of their success, but she has profited by the same lessons to secure her own later advancement.

The pictures on this page are illustrative of the largest of the newer enterprises commonly known as the Gage system, from its projector, Mr. Matthew Gage, to whose ability and enthusiastic effort it stands a monument. A well known citizen of Riverside, Mr. J. H. Reed, who is alert to the just claims of all progressive affairs in his district, says of the Gage system: "The management of this supply of water, from the wells to its distribution in the orchards, has commanded the best hydraulic engineering ability, which, with the intelligent and persevering study of the best methods of applying the water to the land by practical orchardists, has resulted in an irrigation system probably excelled nowhere in the world. It is a system now studied not only by those interested in the rapidly increasing irrigation enterprises in this country, but



Head of Gage Canal, Riverside.



Artesian Wells in the Cienega Supplying the Gage System.



Division Bulkhead in the Gage Canal.

by hydraulic engineers from abroad."

Riverside is supplied by three systems. The lower is the pioneer system. Next came the Gage system, bringing in water on a higher level and making it possible to extend orange planting above the canals of the old settlement. Later still came another system, bringing water to the highlands, mostly on the foothills above the Gage levels and thus spreading the beautiful evergreen of citrus trees over slopes which the old settlers never expected to see thus adorned. The later advances in the water supplies of the whole Riverside country have been secured through the development of water from subterranean sources, which formerly did not enter at all into the plans of water seekers. This has been done so frequently of late all through the irrigated districts of southern California that it may fairly be said that the country would have almost failed had its success rested upon the visible water in

the streams. The Gage system demonstrated a success which has, therefore, proved of incalculable value to the State. It is interesting to note that there have thus been employed, for the maintenance and further development of Riverside, treasures of which the pioneers did not dream. It is interesting, also, that these newer waters are drawn from high-lying cienegas or marshes, which Prof. Hilgard and other experts who have carefully studied them consider one of the largest and best defined subterranean water deposits known. The waters

are free from salts harmful to vegetation, and their volume has endured even during a scantiness of rainfall which is beyond all records since the American occupation.

CALIFORNIA red oat hay is growing in popularity with the fast horse men. Not only is it being used in the California training stables, but is in demand for shipment to racing establishments in New York and South Carolina. Much of this hay is grown in Contra Costa county.

THE Gilroy Gazette says Santa Clara valley in the last year produced 517,500 pounds of onion seed, enough to sow 150,000 acres of onions, which should produce 75,000,000 bushels, if planted on California soil.



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E. J. WICKSON. Horticultural Editor

San Francisco, February 22, 1902.

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## The Week.

Another considerable storm has covered the upper half of the State and some localities are beginning to point with pride to their rain receipts as approaching the normal. The warmer weather is bringing along grain and pasture at a clipping gait and the landscape is showing rich winter verdure. Soon plain and hillside will spread their many-hued carpets of wild bloom in competition with the solid colors of the orchard areas. Again the winter has passed and the lengthening days rejoice both the worker and the idler. The State is well filled with both, for there has been a constant stream of new settlers arriving and locating upon the very desirable lands now being opened to them. This spring there will be a greater rush than for years. The overland lines have agreed upon a \$25 rate from the Missouri river, and it will afford thousands a chance to come and take a look at California with a view to home-making and investment. The newcomers will also help producers to a better labor supply than they have recently had. It promises to be a lively, progressive year in many lines.

Cereals and cereal products are full of activity this week. Both spot and speculative dealings have struck a higher key and held it well. Spot wheat has advanced 50 cents per ton, while May futures have doubled that advance. Freights have favored this course, for charters have been made down to 25s. Barley has made about the same advances as wheat. Three wheat cargoes have gone out and more flour to China and South America. A large half-cargo of barley has gone to Melbourne. Oats and corn are firm and unchanged and other minor cereals are about as before. Beans are stationary, though Pinks are counted firmer and Whites easier. All millfeeds are firm in sympathy with the raw product. Hay is unchanged, quiet and steady. Fresh meats are firm and at former rates all through the list. Butter is higher, with light receipts and an active demand. Cheese is firm for fancy and steady for the lower grades. Eggs are lively for shipping at slightly reduced rates. All kinds of poultry are firm and receipts light, with choice selections selling above quotations. Potatoes are in fair demand for table and seed, while off-grade stock is abundant and slow. Onions also are slow and weak. Apples and oranges are unchanged; fine are scarce and firm at the recent advance, but common are as cheap as ever. Lemons are moderately firm for the best and others neglected. Dried fruits are moving fairly and the market is in good shape at unchanged prices. Prunes are least shapely, perhaps, and there is complaint of resurrection processes on hold-overs. Almonds are steady and walnuts scarce and firmly held. Hop quotations are advanced, but little is doing. The Eastern market is reported strong. Honey is in small supply and

has gone mostly to third hands, except comb honey, which is in freer supply. Wool is still waiting for the spring clip.

Prof. Emory E. Smith of Palo Alto has earned the gratitude of patriotic Californians and of flower lovers everywhere by the completion of a handsome volume on the California Poppy—the beautiful golden poppy of the plains and hillsides, which has been chosen as the State flower of California. Prof. Smith has with rare devotion and patience collected an array of tributes by pen, pencil and brush which are surprising in volume, variety and excellence. No one could have imagined that the flower, worthy as it is, could have commanded so many tokens of praise and appreciation. Literally hundreds of artists and writers have enrolled themselves on Prof. Smith's staff in the preparation of this volume and the engravers and printers have set their works forth in glorious shape. The whole publication is a credit to the State as well as to those who made it. It should be made a home treasure as widely as possible in California, and should be chosen by those who desire to send something elegantly expressive of California to distant friends.

A kind of reciprocity which seems all for the best is in the exchange of beneficial bugs. This is now in active progress between San Jose and South Africa, the operators under this beneficent treaty being County Commissioner Ed M. Ehrhorn and Charles P. Lounsbury, entomologist of Cape Colony. From Cape Colony Mr. Ehrhorn has received the chalcid fly, which destroys several of the fruit grower's enemies. They have been liberated in the orchards of Santa Clara county, have bred rapidly and done excellent work. Last November Mr. Ehrhorn shipped to Cape Colony 15,000 ladybugs of the species known as hippodamia, which is very destructive to plant lice. Recently a letter was received from Mr. Lounsbury telling of the successful liberation of the ladybugs in the orchards of Cape Colony and the good work they were doing. A San Jose writer well says: "Although 16,000 miles of land and water intervene between the two countries, the similar climatic conditions and products make this exchange of courtesies beneficial to both."

We received the other day a very fine sample of the output of ripe pickled olives from the Maywood Colony in Tehama county. It was as handsome and delicious as any we have ever seen, the fruit being firm and crisp, black and glossy, and delicious as a bland, sound flavor could make them. If such olives can be held in their present condition, nothing would be left to be desired in a ripe pickled olive, and it would be hard to estimate the demand they would meet. For our own taste, we would prefer a trifle more acidity and salt, but those are qualities very easily secured. We hope the Corning people will be able to show the State how to produce such fruit by the trainload and to ensure adequate keeping qualities.

After next Wednesday no bees can come into Tulare county without a clean bill of health from the county bee inspector. Thus the supervisors have decreed by the adoption of an ordinance which provides that it shall be unlawful to ship into the county any bees (excepting the queen bee, transported or sent through the United States mails) without first notifying the county inspector of apiaries or his deputies of the arrival of said bees and obtaining a written certificate from the inspector or his deputy that the bees are free from "foul brood" or any other brood which is infectious in its nature and injurious to bees, their eggs or larvae. Any person violating these provisions is liable to a fine not exceeding \$500 or by imprisonment in the county jail for not more than six months or by both fine and imprisonment.

There is still hope for the restoration of the Raisin Association. The committee of fifteen is arriving at promising propositions, and a general meeting will soon be held to consider them. Meanwhile the Prune Association is apparently closing up. Within a few days it will distribute \$300,000 to the members in dividends. There is still much money to be distributed, but this may not be paid for some days, as recent large sales were on sixty days' time.

## QUERIES AND REPLIES.

### Vine Planting.

TO THE EDITOR:—What is the best method of laying out a vineyard on hillside land? What is the best method of planting grape cuttings? Is it advisable to fumigate the cuttings before planting them, if they are taken from a vineyard in another section of the county and shipped on the cars? If so, how is this best accomplished? Will sulphur fumes affect the purpose? or will it injure the vine? How late in the season can the work of planting grape cuttings be done?—NEW SUBSCRIBER, Guerneville.

These questions involve much elementary information that the enquirer should seek in our book "California Fruits and How to Grow Them," and for which space cannot be spared here. However, we undertake brief answers just to provoke readers to take up the discussion if they think we do not hit upon the very best under each question. The best way to lay out on hillsides is the same as on level land, that is in squares. This seems to us to be the conclusion from the widest prevailing practice. The propositions for planting closely in wide-apart rows and the terracing methods have never been widely adopted. The land is easier to handle and to keep evenly cultivated by planting in squares or triangles and not in rows or terraces. The very best way to plant a vine cutting is in a hole dug with a spade or shovel, the earth well tramped around the base of the cutting and left loose above. In light, deep valley loams, however, the planting bar certainly does good work. Disinfection of cuttings is most easily accomplished by putting them in a tight box or tank, placing a saucer of bisulphide of carbon near the top and covering as tightly as convenient with a canvas. The vaporization of the liquid will be the death of all vermin. Sulphur fumes are too dangerous to vegetation to be used. The time of planting vines depends upon the locality and the soil. The nearer the coast and the more retentive the soil the later the planting. The soil must be in good condition and not cold and water soaked.

### Summer-Fallow or Summer Crop?

TO THE EDITOR:—Of great importance to stockmen or ranchers in arid or semi-arid localities would be some grass or other plant which would make a strong growth in summer-fallow and which could be pastured just before seeding time during the fall—the excrement of the stock returning to the soil fully as much as the growth had taken from it. It would strengthen stock in the fall and help fortify them for the hardships of winter. I think experiments along that line might well be encouraged. In this locality, Mariposa county, Egyptian corn is generally planted, if anything, on summer-fallow, but it is not very satisfactory, for the reason that the stalks are not eaten and are quite a nuisance on the ground. There ought to be something which will answer the purpose better.—FARMER, Ben Hur.

The difficulty with getting a growth on summer-fallow would be to secure moisture enough. Egyptian corn and other sorghums grow with less moisture and in higher summer heat than any other forage plants that we know of, and for that reason are quite largely used. We know of nothing that could be used in the way you state unless irrigation could be employed, and then cowpeas or other tender legumes of that nature could be used, but in most cases in California if one uses the moisture which is retained by summer-fallow, for the growth of the summer crop, he defeats his own chief object in summer-fallow which, in the valleys at least, is to store up the rainfall of two seasons for one grain crop. It would be much better for the land to grow a crop to feed off or to plow under than to have the land in bare fallow, but unless you are in a region where there is always moisture to spare you cannot afford to summer-crop the fallow.

### The Masterful Mongoose.

TO THE EDITOR:—I read recently of a mongoose being ordered killed, or at least denied landing alive. The encyclopedia gives the animal every good quality and no bad ones. What is the objection to their introduction?—CHARLES REEVES, Chico.

Your encyclopedia is out of date. A quarter of a century ago the mongoose was counted a natural blessing and was carried around the world to rid lands of rats. It did this; it did more. We have no room for all it did, but we can give a few things from its Jamaica record as described by Dr. T. S. Palmer



in the Yearbook for 1898: "Still the mongoose increased and its omniverous habits became more and more apparent as the rats diminished. It destroyed young pigs, kids, lambs, kittens, puppies, poultry, game, birds which nested near the ground, eggs, snakes, ground lizards, frogs, turtles' eggs and land crabs. It was also known to eat ripe bananas, pine-apples, young corn, avocado pears, sweet potatoes, cocoanuts and other fruits. Toward the close of the second decade the mongoose, originally considered very beneficial, came to be regarded as the greatest pest ever introduced into the island." The mongoose cannot come into the United States. Mr. Craw has guarded California for years; now the whole customs force of the country is onto the beast.

Licorice Growing.

TO THE EDITOR:—Has the growing of licorice root been attempted in this State, and, if so, with what results?—ENQUIRER, San Diego county.

Licorice was introduced into California a good many years ago and has been quite widely experimented with. It has long roots, which run by the yard into deep, light soil, and it specially delights in bottom land where there is abundance of decomposed vegetation and moisture. On ordinary uplands it is out of the question, because of the expense of getting out the roots, which constitute the saleable crop. Even on deep bottom land near the Sacramento river, although all conditions were favorable for growth and the crop large, it was abandoned on account of the expense of harvesting the roots. The consumption on this coast is small and the only chance for profit is in supplying the Eastern demand in competition with the imported licorice. Freight rates are too high to admit of a profit on the shipment of the roots, which are very bulky. It is possible, by establishing extract factories here, so that only the concentrated extract had to be shipped, some profit could be made on the crop; but this requires an amount of investment and experimentation which no one yet has had courage enough to undertake. It is not desirable to experiment with licorice while the conditions for its profitable growth are not demonstrated, because it is a weed of the most serious nature and extremely difficult of eradication.

Brome, Spelt and Rape.

TO THE EDITOR:—What is the value of Bromus inermis, spelt and Victoria rape? Is either likely to become a pest like Bermuda or Johnson grass?—FARMER, Armona.

Bromus inermis, or Hungarian brome grass, is a good plant for moderately dry places, and it will in such conditions maintain its life during the summer time, but on dry plains or hillsides it will not do so. It will grow well on alfalfa lands, but alfalfa is vastly better for summer growth, though Brome grass will grow well when alfalfa is idle. Spelt is a very hardy kind of wheat which is grown in the north of Europe where ordinary wheat is frozen out. It has been tried to some extent in California, but there seems no particular reason to grow it where the better wheats will succeed. Victoria rape is one of the cabbage family, which would probably produce a considerable amount of winter feed in the San Joaquin valley when alfalfa is dormant. In this way it may prove useful. None of these plants have running roots, and will not prove pests like the Johnson or Bermuda grasses. The rape, if allowed to go to seed, would become a weed like the wild turnip or mustard, which is abundant already in California, but it is not likely to be worse than either of these.

Heavy Straw and Light Grain.

TO THE EDITOR:—In Yolo and Fresno counties wheat grows to the average height of about 3½ feet, having large, well-filled heads, while here in Sacramento county, particularly on summer-fallow, wheat grows to the height of 7 feet, having small heads. In other words, we raise three times the straw for the same amount of grain. How may this be accounted for?—READER, Sacramento county.

With reference to the tall growth of wheat and small heads of which you speak, we can only guess that the abundant moisture present during the early part of the season gives you a tall growth and heavy straw, while the lack of moisture later in the season on shallow land over hardpan checks the growth and interferes with the filling of the grain. It would require some careful experimentation to determine

whether this is the right theory or not. So long as one gets a good growth of straw it would seem as though the soil was rich enough and subsequent failure is more likely to be due to lack of moisture than to any other cause.

Another Summer-Fallow Proposition.

TO THE EDITOR:—Will it do to broadcast cowpeas or Soy beans or summer-fallow about March 15th? If so, with a view of building up the soil, is it better to pasture off the crop in the fall or work it into the soil? Could watermelons be used in this way?—NEW COMER, Sacramento county.

What has already been said about the danger of growing anything on California summer-fallow has also an application to this proposition. As summer-fallow fails of its purpose here if allowed to grow weeds, so it would fail with a sown crop unless irrigation water could be used.

Cowpeas and Soy beans are both subject to injury by frost, though the latter is a little more hardy than the former. It is not safe to plant either of them until danger of frost is over—say about the time when you would plant corn or squashes. Whether you will get satisfactory growth during the dry season with these plants depends upon how much moisture will be available. On shallow upland soils there will probably be unsatisfactory growth, while on deep bottom lands, holding moisture well, very fine results will be secured. The best growth of cowpeas we have ever seen was on bottom land near Galt, Sacramento county. Wherever you get a good growth, it will certainly be for the enrichment of the soil either to pasture off the crop in summer or to plow it under. Probably pasturage would yield more fertilizing material to the soil. Watermelon is entirely different from these plants because it is not a leguminous plant and is not able to take nitrogen from the atmosphere. The leaf growth of watermelon is also so much less that it would be decidedly inferior for plowing in fertilizing purposes, though feeding off the melons would contribute to the richness of the soil to a certain extent.

Citrus Trifoliata.

TO THE EDITOR:—Is Citrus trifoliata of the citrus or deciduous family? The tree does not shed its leaves in the fall here as it does in Japan and in Washington, D. C.—READER, Pasadena.

The Citrus trifoliata is a deciduous member of the citrus family. Its deciduousness, or loss of leaves during the winter, however, is conditioned upon the temperatures which prevail. In the thermal belts the temperature may not be low enough to cause the leaves to fall, but, according to our observation, where the mercury drops to 25° during the winter the branches will be bare. If it does not get quite as cold as that, part of the leaves will drop; the character of the growth depends upon the local climate.

Those Covered Orchards in Arizona.

TO THE EDITOR:—I am much surprised that the PACIFIC RURAL PRESS should use, as it did on page 114 of the issue of February 8, such a "yellow" newspaper article as that "story" about the roofing of more than 1000 acres of orange, lemon and pomelo trees. The story is evidently the work of one of the many newspaper correspondents who winter here and must write something. To be sure, there is a small foundation for the squib, but the superstructure is decidedly too large.—SUBSCRIBER, Phoenix.

We are very sorry. But if you only knew how tiresome it becomes sometimes to edit a newspaper which cannot tell a lie, while all the rest of the boys are laying on the ochre as thick as they like, you would not blame us for one lapse, because, after all, it really did have a small foundation, as you admit. But we acknowledge the error. We are no longer in the same class with the immortal George; he never got the building too large for the foundation.

Calf Feeding.

TO THE EDITOR:—I wish to make a beginning in the stock raising business by starting with a lot of calves. In this neighborhood I cannot buy calves that are old enough to do without feeding, but can buy young calves a week or two old. Is there any food I can use in feeding calves of this age that will take the place of milk?—F. L. HUNT, Freeport.

We understand that you wish to get along wholly without milk either full or skimmed. There are patented foods which claim to do that, but we have had

no experience with them nor do we have much notion that they are practicable as a whole diet. If you can get good skim milk you can proceed as described in the PACIFIC RURAL PRESS of July 27, August 10 and September 7, 1901. If you have to bogus the calf all through you will get a poor calf at a high price.

Largest Onion Crop.

TO THE EDITOR:—Will you please inform me what is the largest amount of onions that you know of grown to the acre in this State?—SUBSCRIBER, San Francisco.

The largest crop on record is that grown some years ago in Arroyo Grande valley, San Luis Obispo county, which weighed 66,005 pounds on an acre, and won a prize of \$250 offered for competition through the United States by an Eastern seed firm.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending February 17, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director

SACRAMENTO VALLEY.

Warm weather and frequent heavy rains during the week have been very beneficial to all crops, causing rapid growth of grain and grass. In the vicinity of Vacaville the rainfall amounted to over 3 inches for the week. Farm and orchard work have been temporarily suspended, but no damage has been done by high water. Grain is in excellent condition and prospects are good for heavy crops. Green feed has never been more plentiful. Stock are in prime condition. Vineyards and orchards continue thrifty. The acreage of deciduous fruits and grapes is being considerably increased in some sections. Almond trees are in full bloom.

COAST AND BAY SECTIONS.

Warm weather has continued during the week and crops have made rapid growth. Rain has fallen in all sections, greatly benefiting grain and pasturage. The central and northern counties received heavy rainfall, retarding farm and orchard work in some places, but causing no damage. In the southern counties the precipitation was much lighter, but of great benefit to crops and feed. Grain prospects are very good, especially in the northern districts, and pasturage is plentiful. Deciduous fruit trees are in excellent condition and give indications of abundant crops. Almond trees are in bloom, and prune and peach buds are swelling. The high southwest wind on Friday caused no material damage.

SAN JOAQUIN VALLEY.

Warm weather has continued during the week. Rain has fallen in nearly all parts of the valley, varying from 1 inch in the northern counties to light showers in the south. From Fresno county northward the rainfall has been very beneficial, and grain and feed are in good condition. Kern, Kings and Tulare counties and the lower portion of Fresno county have received very little rain during the season, and crops are in very poor condition; grain is reported as nearly ruined in some places, and green feed is very scarce. Grain and grass have made rapid growth in the northern districts, and plowing and seeding continue. Deciduous fruit prospects are reported excellent. Pruning is nearly completed.

SOUTHERN CALIFORNIA.

Generally clear, cool weather has prevailed during the week, with fog in some sections and light sprinkles of rain along the coast. The fogs have been beneficial to barley and wheat, and fair crops are probable if the usual late rains occur. Conditions have been favorable for walnuts and deciduous fruits. Irrigation has commenced in orange and lemon groves, as the soil is becoming very dry. Late sown grain in San Diego county continues in good condition and will not suffer for rain for two weeks. Plowing and seeding are progressing in some sections.

LOS ANGELES SUMMARY.—Except in some eastern valleys, grain and grass are suffering badly for rain. Without timely and abundant rains there is little prospect for grain and hay crops. Orange shipments are generally active.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, February 19, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the Week.	Minimum Temperature for the Week.
Eureka.....	1.64	17.68	21.39	17.53	66	40
Red Bluff.....	.58	9.23	15.42	16.63	72	40
Sacramento.....	1.42	10.51	16.04	17.98	64	44
San Francisco.....	.08	2.86	9.51	8.93	80	34
Fresno.....	.00	1.39	5.47	4.93	68	28
Independence.....	.00	.44	7.82	26.45	12.24	74
San Luis Obispo.....	.01	4.22	13.66	13.30	76	42
Los Angeles.....	.00	2.46	8.58	6.05	68	46
San Diego.....	.00	.48	.14	2.42	86	38
Yuma.....						



## ENTOMOLOGICAL.

## Winter Spray for the Peach Worm.

By PROF. C. W. WOODWORTH and WARREN T. CLARKE of the University Experiment Station.

**INTRODUCTORY NOTE.**—The observations and experiments made by Mr. Warren T. Clarke, who is conducting the field work of the peach worm investigation that this station has undertaken in Placer county this season, bring out very convincingly that the time is now at hand when the most effective work against this insect can be done. Probably not over 10% of the peach trees in this State are properly sprayed for the peach worm. The loss it occasions in the principal peach sections can not be far from 25% of the entire crop. With proper spraying, as indicated in this bulletin, it could probably in most cases be reduced to below 5%. This matter should, therefore, receive the immediate and careful attention of every peach grower.—C. W. WOODWORTH.

**WINTER QUARTERS.**—The peach worm passes the winter in a minute burrow which it has cut out beneath the bark in the crotches of the tree. The position generally chosen is in the crotch formed by the new wood with the wood of the previous year, though older crotches are occasionally used. The position of these burrows is generally indicated by a small silken tube covered with excrement, usually of a brownish color. These are exceedingly minute and will usually escape observation. The burrows are cut out well beneath the bark, which is here quite thin, and extend into the cambium layer. In the majority of cases they will be found to be just beneath a thin layer of the greener cells below the brown bark, while the greater part of the burrow is in the yellowish portion of the cambium. The burrow is generally about three times as large as the worm occupying it and is lined with silk. The silken tube covered with excrement, referred to above, which projects from the mouth of the burrow, is an extension of this lining. The worm occupying the chamber commonly lies at the deep end of the burrow with its head toward this external tube, though it may be found in almost any position. The exact fall history of the worm is not yet known, and therefore the age of the worm as found in the winter can not be definitely given. We do know, however, that there is some variation in the size, and the specimens show two stages of growth, judging by the sizes of the heads. The silken lining of the burrows is made after feeding ceases in the fall, and, therefore, the increase in size and the moulting of those that attain the second stages indicate a certain amount of feeding before going into winter quarters. The silk-lined chamber remains unbroken under winter conditions, which shows that during this time the worm does not feed.

**SPRING AWAKENING.**—With the increase of temperature in the spring the worm becomes active in its burrow and after some time escapes to the surface of the bark. The habits during this awakening have been studied in experiments in which spring conditions have been artificially maintained. The attack upon the walls of the burrow does not begin until the lapse of a number of days, the length of time being dependent upon the temperature at which the worms are held. In no case could feeding be induced under three days, though activity immediately follows warming. The worm first bites away the covering portion of the silk lining and attacks the bark above the burrow. The material removed is not merely enough to release the worm from the burrow, but the whole upper surface of the chamber is excavated. When in these experiments the worm was once on the surface it never re-entered the bark, and the inference is that it then probably seeks its food elsewhere.

**SUMMER ACTIVITIES.**—Briefly, the history of the summer activities is as follows: The young worm leaves its winter house and attacks the new shoots, boring into them either at the tip or at the side. In this form it is known as the "bud worm" or "twig borer." Eating this succulent new growth, it attains its full development in a short time, seeks some cranny, passes into the chrysalis form and appears later as the moth. During the summer there are a number of generations, this number probably varying with the locality. The greatest injury by the peach worm in the orchard is that done by these later summer generations, the worm burrowing deep into the fruit and producing the results so well known to all growers.

**REMEDIES.**—Our limited knowledge in regard to the habits of the summer generations of the peach worm make any suggestion in regard to remedies to be applied in the summer out of the question at the present time. It is hoped that practical summer remedies may be brought out as we advance in our knowledge of the worm, because the rapid increase of the worm during this time makes considerable liability to loss, especially in late peaches, in spite of the spring treatment. The various suggestions that have come to us in regard to sprays and band and light traps will be fully tested during the coming season and suggestions will be gladly received.

**USELESS REMEDIES.**—In the process of pruning

some worms are removed; but it can not be depended on as a remedy, since a majority of the worms remain in the tree after the pruning is done. The observations made this season indicate that the early or winter spraying have been equally useless as a remedy for this insect. This is explained by the fact that the worm is fully protected in his winter home from any spray that may be directed against him. His silk-lined burrow is not to be penetrated by any material that can be practically applied as a spray. Spraying and submerging the twigs in which the burrows occurred in spray material such as is used against scale insects, show how almost impossible it is to penetrate to the worm in its winter position.

**SPRING TREATMENT IS EFFECTIVE.**—According to the reports relative to last year's crop which we have been able to gather, there is a marked difference between the orchard that has been properly sprayed and the improperly or unsprayed orchard, and in certain cases this difference can be seen this winter, the worms in the bark being strikingly different in numbers. This difference is to be seen in orchards that are immediately adjacent, showing that, while the moths do spread freely, this does not overcome the relative immunity obtained by spraying. In properly sprayed orchards adjoining unsprayed orchards the rows next to the unsprayed trees show infestation; but this decreases as the distance from them increases, the difference being quite marked in from two to five rows. A similar difference, quite as much in amount, is noticed in contrasting winter and spring-sprayed trees. The percentage of loss in the spring-sprayed orchards has been reported as low as from 2% to 5%, while in adjacent winter-sprayed or unsprayed orchards it commonly runs from 25% to 30%. These results will accord with the well known spring habit of the worm of tearing away the silk covering of its burrow. The activity of the worm is without doubt coincident with the activity of the tree—that is, the same conditions of weather that will cause the tree buds to swell and grow will also make the worm become active and vulnerable.

**THE SPRAY TO USE.**—The results obtained in this inquiry indicates that the best spray to use is the lime, salt and sulphur. This material has given the greatest satisfaction in actual practice in previous years. It is a cheap mixture. In laboratory experiments it compares favorably with all the other remedies tried. It is one of the quickest to kill that we have used, and its penetrating power is good. It is as valuable as the Bordeaux mixture for the control of curl leaf; it is likewise the most available remedy for the destruction of the San Jose scale, if this be present. Finally, its general good effect on the tree, resulting in a more healthy condition of the bark, is well known. The good qualities of this material more than counterbalances the unpleasant features attendant upon its making and application.

**HOW MADE.**—The generally accepted formula and directions for making the lime, salt and sulphur are as follows:

Ingredients.	
Lime (unslaked), pounds.....	40
Sulphur, pounds.....	20
Salt, pounds.....	15
Water, gallons.....	60

Take ten pounds of lime and twenty pounds of sulphur and boil in ten gallons of water from 1½ to 2 hours, or until the sulphur is completely dissolved. This will be shown by the liquid assuming a clear amber color. Slack the balance of the lime and to it add the salt. When this is all dissolved add to the lime and sulphur solution. Boil from thirty to forty-five minutes more. Finally add enough hot water to make the full sixty gallons and apply to the tree hot. The efficiency of the lime, salt and sulphur mixture depends upon the union of the lime and sulphur, and this result can only be obtained by thorough boiling. A simple mixture of three materials is useless, as such a mixture has neither penetrating nor killing power.

**HOW AND WHEN APPLIED.**—A mistake commonly made is to neglect in spraying the upper and outer part of the tree. It is most important that the new wood should be sprayed. No part of the tree should be neglected, and least of all the part where the new growth is found. As has been previously noted, the worm generally chooses the new wood crotches for its hibernating cell, and a neglect to apply this spray here means the escape of the worm. The spray should cover the whole tree. The evidence at hand seems to indicate that it would be useless to apply a spray before the buds show signs of swelling. That spraying should be done after this swelling is evident, but it should not be delayed until too late, because of possible injury to the blossoms.

The U. S. Geological Survey states the number of springs of mineral water on the list as utilized during 1900 is larger than for any previous year, the net increase over 1899 being twenty. Thirty-seven springs have been added and nineteen dropped, making a total number for 1900, 561 as against 541 for 1899. The number of springs actually reporting sales is 491, more by twelve than the number for 1899. The amount of waters sold in 1900 exceeds the record for 1899 by about 8,000,000 gallons.

## THE VINEYARD.

## Resistant Vines.

By WILLIAM PFEFFER at the Farmers' Institute at Cupertino.

To prepare a paper on "Resistant Vines" has undoubtedly been assigned to me because of the many big blunders I have made along the viticultural line; and as such, I suppose, I am expected to be ludicrous for the amusement of the audience. Were the topic of resistant vines not becoming from year to year of a more serious nature, I would have respectfully declined to have anything to do with it, inasmuch as the writing of essays is not to my liking, and I much prefer to do some handiwork in the vineyard.

**THE OLD RESISTANTS.**—Nearly seventeen years ago when I planted a considerable addition to my vineyard with resistant stocks, I felt happy in forestalling any mischievous work the phylloxera might do some day when appearing in this district. The vines I planted were of the Riparia family, seedlings, grown in this county. They were allowed to grow ungrafted for three years. In the third summer, I remember, I feared I would lose a good many of them by sunburning during a hot spell of weather rather early in the season, and by which the loss of leaves was considerable, besides the drying up of the immature wood exposed to the sun. Soon after they were grafted I learned to my sorrow that not all vinifera varieties would bear satisfactory crops of grapes on these stocks, and many were the vines we had to graft the second time. The vines made from grapes grown on these Riparia stocks were unusually heavy, containing as much alcohol, color and tannin as there should be in a table wine of medium strength.

By this time I also tried a vigorous growing variety of the Rupestris family; but since the vines after grafting proved to be such very shy bearers, I never made wine of grapes grown on Rupestris stocks.

The Lenoir was recommended as a stock much better suited for our semi-arid climate, and soon I planted some of these. Cuttings of this kind, however, would not grow so readily and for a long time they were neglected.

**MUNSON'S HYBRIDS.**—The stocks tried so far were far from being satisfactory, and I looked out for better sorts. Now I learned of Prof. T. V. Munson of Denison, Texas, propagating and dealing in resistant vines, and soon after I tried the Solonis and Champini as graft stocks, as well as several of his hybrids for direct bearing.

The Solonis has given me more satisfaction than those just named; it was so easy to root, grafted well and bore satisfactory crops.

The Champinis, of which I have three varieties, differ merely in botanical markings; the character of all is the same. They differ from the Riparia, Rupestris and Solonis in not rooting readily in cold soil, but present no difficulty in warm and moist soil; they strike only one or two roots straight downward, penetrating the hardest soils or clays. They draw their nourishment from deep layers of soils, into which the roots of Riparia, Rupestris or Solonis are unable to reach. The Champinis are sun-loving plants, equalled in this respect by very few. They are vigorous growers in any soil, provided it is not wet, and are adapted to the warmest soils and hottest locations where grapes can grow. They do not cease to grow in midsummer when moisture is sinking to a low level, but grow right along as long as the sun shines warm. They bear satisfactory crops when grafted and seem to be endowed by nature with great endurance to withstand any hardships.

Up to this time I have been fairly successful in forestalling the phylloxera by simply grafting our favorite vinifera varieties upon Riparia and Solonis stocks; and for better adaptation to our rainless summer climate, as well as the more serious drouths resulting from scant winter's rainfall, I had, besides the Champini, Post Oak, Candicans and Monticola hybrids, the Doaniana, the numerous family of Bourquiniana, as successful stocks to choose from. Fate, however, decreed that the path of the vineyardists shall not be strewn with roses, and another obstacle much more difficult to put out of the way is now confronting us.

**LOSS OF VINES.**—I am aware of the fact that most vineyardists of this western half of the county believe the three years' drouth has destroyed our vineyards, but there are others who firmly believe it is the California vine disease. They prefer, however, not to say anything about it, as it is considered dangerous to say so in public and, as a Napa man has it, "a libel to the fair county of Santa Clara."

At present it is of little importance to us to know exactly what killed our vines, what we want to know is: How to replant with a prospect of success.

**WHAT IS NEEDED.**—We cannot take stocks in wild speculations, we want stocks not only resistant to phylloxera and drouths, but also resisting any disease which might menace the health of vines. For this reason we must work out our own salvation by taking stocks on the Darwinian principle and select from "the survival of fittest" for replanting our devastated vineyards. There are, I believe, some vineyards planted to one or two varieties in which



all vines are destroyed or in a dying condition, yet there are others in which healthy vines of different varieties can be found.

Whether or not this disease has run its course no one can tell, yet it is reasonable to believe that such vines remaining in good health do possess a fair degree of resistance and these should be well taken care of.

Probably the very different behavior of the vines in my vineyard may be interesting at this time and may assist you in forming a correct conclusion as to the cause of the wholesale dying of the vines.

**HOW THE VARIETIES BEHAVED.**—The first few vines which died early in the season of 1899 without previous warning were grafts of Cinsaut growing upon Riparia roots. Towards fall a few dozen of Mataro grafted upon Riparia looked very sick, it was the second dry year and not unexpected. Early in the season of 1900 I lost a graft of Doaniana grafted unintentionally upon a Riparia stock the year before. This stock made a very big growth and to see it dying so quick was puzzling to me. Toward the close of the season of 1900 sick-looking vines could be seen all over the old and young vineyard which were grafted upon Riparia, Solonis and Rupestris stocks.

Five different varieties of Rupestris were planted in spring of 1897 and grafted with Zinfandel scions two years later. They bore a light to medium crop of grapes in 1900, and the wood growth was light. In spring of 1901 all were slow in leafing out; three varieties were unable to make any growth at all and died soon; the other two varieties brought forth a few feeble canes from the lowest part of the top—all the wood above is dead.

Of four vinifera—(Rupestris hybrids planted in spring of 1897) two varieties bore a good crop of grapes in 1900; the crop of the other two was unsatisfactory; all died during the season of 1901.

In a collection of nine different graft stocks received from Prof. Munson early in the season of 1897 all proved to be excellent stocks (except one, which was a straight Rupestris), admirably adapted for California conditions; not all of them, however, were hardy enough to resist this grape top disease and I discarded six varieties. Those found satisfactory so far are the Valencia, Rulrup and Doaniana.

In a block of Mataro grafted upon Solonis planted six years ago in new soil, one single healthy vine was found in the center of the block when strolling in company with Prof. Newton B. Pierce of Santa Ana through the vineyard in the second week of October last. This Mataro graft had a fair crop of fruit, the wood ripe to the tips of the canes. We observed, however, by a sucker coming out from the stock below the surface that it proved to be a Champini stock and not a Solonis.

Zinfandel and Tanat grafted upon Champini are so far in good condition and had a good crop of grapes this past season. Sauvignon Vert grafted upon the same stock at the close of the season shed many leaves without the stem, and many canes on the top of the vines had the wood in an immature condition. All vines were loaded heavily with extra fine fruit.

**CONCLUSIONS.**—From observation and experience in general I am forced to come to the following conclusion:

1. All vinifera varieties, probably a few kinds excepted, growing on their own roots are doomed. (The so called Pfeffer's Cabernet, by some called Pfeffer's Black Burgundy, and still by others called Robin Noire, is on its own roots a remarkably hardy vine, resisting in this district fairly well both phylloxera and this grape top disease; so also does the Grenache; probably other varieties will yet show up).

2. Vinifera varieties (with probably a few exceptions) grafted upon Riparia, Solonis and Rupestris stocks are nonresistant and succumb quickly.

3. When hardy vines, such as have a high percentage of blood from the Vitis Canadicans, known under the popular name "Texas Mustang" grape, in their make-up are grafted upon soft stocks, such as Riparia, Rupestris and Solonis, and the graft is not allowed to form roots, the whole vine will die.

4. Soft Vinifera varieties, like Mataro, grafted upon hardy stocks, have a poor show to live long.

5. None but the hardest varieties of the vinifera class of grapes grafted upon the hardest stocks hold out a prospect of success.

Amongst the direct producers originated by Prof. Munson and on trial in my vineyard now for eight to nine years, I find all varieties of the Post Oak-Herbemont family healthy and vigorous; the Neva is a regular bearer of numerous small to medium sized compact clusters of black grapes.

In the Post Oak-Triumph family all are vigorous growers, perfectly resisting phylloxera and drouth; they bear medium to large clusters of black grapes, yet not all have the necessary hardness to withstand this vine disease. The big Extra is a wonderfully healthy vine productive of medium sized clusters of black grapes.

**TO PENETRATE TOUGH CLAYS.**—A unique vine, hybrid of Elvira Canadicans, and named by Mr. Munson Elvicand, is an extremely healthy and vigorous grower, possessing the most powerful root system, and brings forth on every bearing shoot from four to five clusters of black grapes.

I have tasted grapes of Munson's newer creations

which in flavor excel the viniferas. The only drawback or fault with them is, they have been shy bearers in the first few years growing in California. Probably this may be due to the prevailing disease amongst grape vines, which has an unfavorable effect on all vines more or less.

I confidently expect in the near future the appearance of an all-round satisfactory direct producer, a vine which will relieve vineyardists of grafting one upon another, an operation which is at best a poor makeshift.

Cupertino.

## THE FIELD.

### Advantages of Mixed Farming.

By MR. G. K. SWINGLE of Davisville at the University Farmers' Institute at Woodland.

In certain localities in the State the practice of devoting enormous areas exclusively to one product will probably be kept up for many years, but in this part of the State the diversification of our product is becoming more and more of a necessity. The reasons for this are obvious.

First, continuous cropping of any one product exhausts the soil to an unprofitable degree; second, there is an almost unavoidable waste about handling any crop almost exclusively, a waste which diversified farming frequently utilizes profitably; third, by having a variety of interests a man is much less at the mercy of the market, as when one product is low-priced during the season it is very likely to be helped out by some other which commands a good price. Crop failure, too, is far less disastrous to one who is not dependent on a single crop than to one who has pinned his faith to one thing only, hoping to "strike it right." In this connection I am frequently reminded of a remark made to me by an observant foreigner who had unusual opportunities for noting our methods. He said: "The average California farmer puts all his eggs in one basket, and then once in a while some one puts a foot in the basket and smashes them all." On diversified farms the destructive foot doesn't have as good a chance.

One who practices diversified farming in its widest sense should have some knowledge of orchard and vineyard work, as well as the production of stock, the dairy business, and the usual run of hay and grain business.

**IMPROVING THE SOIL.**—The exhaustion of soil is not so marked here as in the Eastern States, but is already beginning to be apparent. By substituting for a cereal crop one of the clover family we not only make a draft on certain fresh soil ingredients not drawn on so heavily by the cereals, but we return to the soil the most valuable of the different elements of plant food. That is nitrogen. This is accomplished by the bacteria which have their home in the little nodules found on the roots of such plants. Here, by some mysterious action of nature, they draw from the air and store up for us nitrogen, which would prove, if we were forced to buy it, the most expensive ingredient of commercial fertilizers.

An example of this in the action of bur clover came under my observation recently. A field which had been under cultivation for many years was pastured down for several seasons in succession, producing each year a very abundant crop of bur clover. It was then plowed, turning under the green clover. Last season that field produced over seventeen sacks of wheat to the acre, while adjoining land not so treated produced a poor crop.

The enrichment by animal manure is another advantage of diversification that appeals to the man who does not want all his eggs in one basket. An old Persian saying is that "the sheep has a golden hoofprint," and certainly the golden hoof works in to perfection with the undivided interest of the farm. As a means of cleaning fence corners and exterminating weeds they are unequalled, besides keeping fat where anything else would get poor. Their manure is naturally distributed over the field, and the same will, of course, be true of most of the farm stock, but where it is collected as from a barn or cattle shed it should be cared for as well as possible—probably stored under cover if it is not possible to apply it at once. A most excellent way is to keep a barn or any place where manure collects sprinkled with gypsum, which fixes the nitrogen of the ammonia in the manure and prevents its escape. If possible, a manure cistern where the liquid as well as the solid manure can be preserved is, of course, a long step in advance. It is such practices as these which have enabled English cattle breeders to keep up the fertility of their soil after centuries of cultivation. Every head of cattle, every hog, every member of the poultry yard does its share toward providing the sustenance which will, in time, support others of its kind.

**THE HOG.**—The abundant support given the creamery proposition in this neighborhood testifies to the willingness of many to put out more than one product of their land; nor is it necessary to more than mention here the important part the hog plays in the creamery industry, as he utilizes to the best advantage that important by-product, the skim milk. No one can afford to waste separator milk when

pork is worth the present price, and, as Prof. Henry has shown at the Wisconsin station, five pounds of skim milk are equal to a pound of grain when fed with grain. Another instance of utilizing waste is found in the orchard industry, where in almost every case there is some fruit which cannot be marketed—either windfalls or an inferior part of the crop that through low price or some other cause cannot be profitably handled.

After harvesting a prune crop I have always found that hogs made good gains for some time on the refuse fruit which it has been impossible to save. The combination of straw and alfalfa is beginning to be better understood, so that much straw is now saved by mixing with alfalfa, thereby making a better balance ration than alfalfa alone and avoiding a useless waste of straw. The remark is often made that a European or Northeastern farmer would live on what a California farmer would waste, and, though an exaggeration, there should be no grounds for thinking it true. It should be the constant aim of every farmer to utilize or avoid all waste. In this way, by making each industry on a diversified farm supplement the other, we approach nearer the business methods of our great manufacturing enterprises, in which the economy of production is the wonder and consternation of foreign competitors.

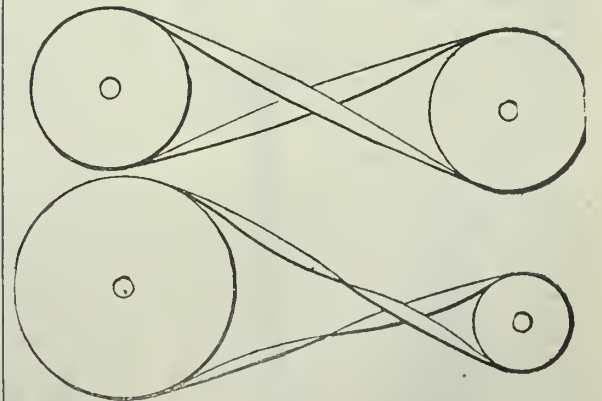
Irrigation is, of course, the greatest possible aid to the diversification of our products, but even without it more can be accomplished than many attempt.

**TRY SOMETHING ELSE.**—The excuse usually given is that the land will not produce anything but wheat and barley, and yet nothing else has ever been tried. Take, for example, a block of average wheat land. Let the farmer figure out the net profit from grain alone. Then let him imagine that land devoted to such a variety of products as are practicable. Raise all the alfalfa possible, also Kafir and Indian corn, etc. Sell to some creamery, if possible, the milk from as many cows as it will support. Raise as many hogs as possible. Keep some sheep. Have an orchard and vineyard. In short, let him figure out the income of as many lines as he can properly manage, and see if the net income is not greater than from grain alone.

In conclusion, I most heartily urge each farmer to try diversification so far as feasible and circumstances will permit. Produce crops which do not so rapidly exhaust the soil and yet can be so handled as to bring a revenue equal to those which make a heavy drain upon it. Return to the soil, so far as possible, the fertility that each and any crop withdraws. Plan the relation of the various crops to each other so that economy of production as well as good condition of the crop is assured.

### To Make Cross Belts Run Smoothly.

What are usually known as cross belts are very common in driving machinery, and it is a well-known fact that they run best when the two pulleys which they connect are somewhere near one size. But sometimes it is necessary to use a cross belt on pulleys of very different diameters. This may be done and still have the belt run smoothly. If the belt connects two horizontal shafts on the same level, and is given the ordinary turn or twist, it will naturally stand in a vertical position at a point midway between the two shafts. Now, if the two pulleys are of one size, this midway point is the natural crossing place for the two parts of the belt and all goes well.



But if one pulley is much larger than the other, then the belt must cross at a point much nearer the small pulley than the larger one, and with the ordinary twist the two parts of the belt are apt to quarrel, so to speak, at this point. To remedy this, in many cases it is only necessary to give the two parts of the belt an extra twist as they pass from one pulley to the other. The belt then will stand vertical at two points, marking the thirds of the distance between the shafts, and if the pulleys are of such sizes that the belt crosses at or near one of these points they will run smoothly again and with very little friction.

**PETROLEUM**, it is claimed, can be deprived of its odor by adding to it about 2% of chlorite of lime, and stirring thoroughly for a long time. The mass is then stirred up with unslacked lime and allowed to stand. The petroleum will then have no offensive odor and can be decanted off from the calcareous sediment.



## Agricultural Review.

### ALAMEDA.

**PROFITS IN RHUBARB.**—Oakland Enquirer: One of the prosperous agricultural industries of this county is the growing of rhubarb for the California and Eastern markets. At the present time 500 acres of the best land in the county are devoted to the cultivation of the rhubarb plant. San Leandro is the center of the industry. During last spring the shipments of rhubarb to Chicago were more profitable than in any former year, and as a consequence about 200 acres have been added to the area formerly cultivated. Twenty carloads were shipped this year, each car containing 560 boxes. The boxes weighed about forty-two pounds each, and the shippers received a profit of something over \$1 per box, net. The San Francisco shipments, although much larger in amount, were not quite so profitable; but the home and foreign shipments, taken together, averaged a net return of \$1. When the plant nets \$1 per box the profits are large. It will pay 10% interest on land worth \$1000 per acre. The vegetable land around San Leandro is worth not quite \$1000 per acre, but it has sold as high as \$700, and recently \$500 per acre has been refused by owners of choice land.

**JUDGMENT AGAINST CALIFORNIA COMMISSION CO.**—Niles Herald: Judge Hall has rendered a decision in the case of E. A. Ellsworth of Niles vs. the California Commission Co. of San Francisco in favor of the plaintiff, granting Mr. Ellsworth his claim in full with costs, amounting altogether to \$4031.51. Mr. Ellsworth bought apricots to the value of \$11,900, paying part in cash and giving a time draft for the balance, but these drafts were not met when due. The Commission Co. did not deny receiving the goods but denied the authority of Wolff to sign and accept the drafts despite the fact that they had honored several he had made previous to these involved in the suit.

### BUTTE.

**PROFITABLE ALMOND TREES.**—Oroville Register: John Evans of this town has an almond tree that shows all almonds are not worthless as money makers. The nut is large, plump, soft shelled and of very fine flavor. The tree blooms fully a month later than the ordinary almond and thus escapes the frost. Mr. Evans has two of these trees and for the last nine years he has missed but one crop. The nuts from the two have brought him from \$9 to \$11 per year.

### COLUSA.

**BIG ACREAGE IN BARLEY.**—Sun: There is a greater area in grain than has ever been planted in any one year in the present area of Colusa county, and it has all gone in the ground in good shape. With spring rains, Colusa will have a large amount of grain to sell, and an unusually large part of it will be barley. This cereal matures with less rain than wheat. But it requires the spring rains to make good brewing barley, and the sale for anything else is very limited.

**LARGE OAK TREES.**—Willows Journal: A dispatch from Oregon claims the third largest oak tree in the world. The tree measures 31 feet in circumference. There is a live oak tree up in the Coast mountains in Glenn county which measures 30½ feet and a common river oak in Little Indian valley in Colusa county which measures 32 feet.

### FRESNO.

**SHEEP GRAZING APPLICATIONS.**—Forest Superintendent Newhall has received the grazing application blanks for the coming season and will distribute them as rapidly as possible. Stockmen who held permits last year and lived up to the requirements will receive them for next spring without further application. New names should be sent to Mr. Newhall in this city, either directly or through local officials. The clause in the permits of last season to the effect that no cattle might be corralled within 500 yards of running water, has been eliminated from the new blanks, as it was found to work a hardship in some cases.

### LOS ANGELES.

**EXTENDING THE WALNUT GROVES.**—Herald: A tract of seventy-five acres near Santa Monica is to be planted to walnuts this season. Five walnut growers of Rivera have formed a company known as the Rancho Del Mar Co., and have purchased for \$12,000 this piece of land and will engage in a business they are well qualified to carry on successfully. The incorporators are T. L. Gooch, George Gooch, Dr. H. L. Coffman and wife and Mrs. C. A. Coffman. Only the soft-shell variety of walnuts will be planted.

**FRUIT SPOTTED BY DISTILLATE SPRAYING.**—Los Angeles Times: Mayor

T. W. Jones of San Gabriel has practically ruined his citrus fruit crop by spraying. He has about 5000 boxes of oranges so badly injured that it is with difficulty he can get a bid on the fruit for shipment. "One thousand dollars would not make good the losses I have sustained and it will likely reach even a much higher figure," says Mr. Jones. "Over 95% of the crop is discolored and much of it entirely ruined. My neighbors seem to be as severely touched, for they sprayed about the same time and with the same quality of distillate. I will not try this method again."

### RIVERSIDE.

**DIVERSIFIED CROPS AT INDIO.**—Los Angeles Times: While visiting Indio last August I was astonished at the exuberance of the muskmelon when grown under favorable conditions. Planted 5 or 6 feet, an acre will contain 1450 hills. Long before the melons begin to ripen these merge into a solid green, and it would be impossible to estimate the number of cantaloupes produced upon an acre. At one dozen to the hill it would amount to 325 crates. Sweet corn 3 feet by 9 inches has produced 20,000 perfect ears to the acre, or about \$160 worth of corn. Onions 3 feet by 6 inches have "turned out" 25,000 onions, or about 2100 dozen, selling for \$500. An El Monte farmer raised 100 sacks of potatoes and 100 bushels of corn on one acre at the same time. These are extremely successful cases, but they emphasize the fact that there will be a profitable field for more diversified farming in southern California when fruit growing becomes limited to its practical area—the regions of soil and climate adapted to its profitable culture.

### SAN BERNARDINO.

**MARMALADE FACTORY.**—Redlands Facts: The marmalade factory of H. P. D. Kingsbury has begun operations. Already many cases have been bottled and labeled and packed for market. It is an interesting sight to watch the process by which the oranges are made into such a delightful delicacy. First into the boiling cauldron, then into the pans, from thence into the bottles, to the capper and labeling machine. Three new machines for the saving of labor were received recently—the corking machine, labeling machine and water motor for washing bottles.

**USE OF FERTILIZERS BY DEEP APPLICATION.**—Redlands Review: Carroll B. Smith has obtained from Riverside a drill that fills a long-felt want of horticulturists. The new drill is operated by one horse and one man, who are supposed to follow the plow when the orchard is plowed. The drill subsoils the plow furrow several inches, and at the same time places the fertilizer at that depth. The shoe which breaks the way for the drill will not cut the roots of trees. The drill will put in any quantity from 100 pounds to a ton to the acre.

### SAN JOAQUIN.

**A COSTLY BOAR.**—Stockton Mail: The Pierce Land & Stock Co. has purchased from S. B. Wright of Santa Rosa the famous prize-winning boar, Star Baron, No. 57,513, to head its herd of Berkshire hogs at its Riverside ranch, formerly known as Oakland ranch, on Rough and Ready island. This young boar was awarded first premium at the California State Fair in 1901 in the yearling class. At the same time and place he was entered in "Sweepstakes" class and captured first prize. He and three of his half-sisters won first as "four best swine, the product of one boar and bred by exhibitor."

**BIGGEST TOKAY VINEYARD ON RECORD.**—Lodi Herald: The present season will witness in northern San Joaquin the planting of a larger acreage to grapes than has been planted in any two years heretofore. Over 3200 acres for this season has been reported. A big proportion is going out in the Woodbridge section to wine varieties, while east, north and south of Lodi the growers are inclined to favor table grapes. Of the former varieties, Zinfandels seem to be the choice, and growers of that variety have given away nearly all their spare cuttings to their friends. Ex-Senator B. F. Langford is taking the lead as an individual table grape grower. At his home place in the colony he is setting out 240 acres to Tokays, or about 74,000 vines. So far as is known, this will be the largest straight Tokay vineyard in the world.

### SANTA CLARA.

**LOGANBERRIES FOR ENGLAND.**—San Jose Mercury: William Kelly, of the Garden City Nursery of this city, has received an order from Hexham, England, for loganberry vines to the value of \$60.

**GREAT GRAPE PLANTING.**—Gilroy Advocate: On the San Martin ranch the Santa Clara Valley Land Company now have four eight-horse teams and two four-horse teams at work plowing the 700 acres which they will plant in 400,000 cut-

tings of phylloxera resistant vines, of the variety known as "Rupestris St. George." The soil is being plowed 12 inches deep and double harrowed. Arrangements have been made to irrigate the land the coming season should there prove an insufficient rain supply this spring.

### SANTA CRUZ.

**BERRY GROWERS MEET.**—Watsonville Pajaronian: The Watsonville Berry Growers' Association held a very important meeting on Monday which was largely attended. For some time it has been known that the Pajaro berry crop this season would be the largest ever harvested here, and it is also known that in Florin district, Sacramento county, there is a large acreage planted to berries and that most of the crop would probably be marketed in San Francisco and probably come in competition with the Watsonville berries. The aim of the Watsonville Berry Growers' Association is to have all the growers sign an agreement to ship their berries to a limited number of San Francisco commission houses and if possible secure a flat price per chest for them, the same as was secured last year. Another aim of the Association is to develop a new market in southern California for the berries, and last, but not least, to secure from the railroad company the best train service for hauling their berries to market. A committee was appointed and is now at work ascertaining the name of each berry grower in the valley, the acreage they have planted, the estimated yield, what station they will ship from and whether or not they will join the compact. Another committee is appointed for the purpose of interviewing the railroad officials and looking up new markets. It is roughly estimated that there are 1000 acres planted to strawberries in this valley the present season.

### SHASTA.

**LIVESTOCK ASSOCIATION.**—Searchlight: The Shasta County Livestock Association will soon begin the work of compiling a register of the brands and marks of all the members of the association. The only requirement for membership is ownership of live stock. Admission to the association may be gained by application, with the recommendation of some member of the organization. A large number of applications have already been filed and others will be presented at the meeting to be held on Saturday, March 1st, at Millville.

### SONOMA.

**CHICKS GALORE.**—Sebastopol Times: Mortimer & Cunningham, who conduct a poultry ranch out on the Petaluma road near the Mt. Vernon schoolhouse, have just made a wonderful hatch of chickens. From 247 fertile eggs they got 243 sound, lively chicks.

**MONEY IN HAY.**—Sonoma County Farmer: Four years ago the dry season forced prices up, but many lived to regret that they had refused \$16 for hay in the bale. The following year we had a big volunteer crop, which was forced onto the market, much of it going at as low as \$3 a ton. Hay has been cleaner for the past two years, and the bulk of it has been used in Sonoma county, bringing fair prices where growers sold to consumers. To-day it is worth \$10 to \$12 and may be even higher before new hay comes in. It is evident that with the large increase in orchards and diversified farming generally it will pay very well to raise good, clean hay on land adapted to that crop. Some of our farmers make good money on hay year after year, but we notice that they select good seed, plant early, cut and bale it at the right time and house it early, selling as far as possible to consumers, who know good hay and take satisfaction in buying of a man who can guarantee quality.

### SUTTER.

**FROST PROTECTION BY BASKETS OF FIRE.**—Sutter County Farmer: Several of the fruit growers in this section are arranging to try placing iron baskets filled with fuel in their almond orchards and lighting them if the temperature falls to the freezing point this spring, so as to protect the fruit buds. We understand that J. W. Blevin, who has a large orchard northwest of town, will try this plan for his apricots. The trees are full of buds and he wants to insure a crop by keeping off the frost. This system is said to be far ahead of the old way of smudging.

### TULARE.

**WHAT ORANGES BROUGHT.**—Visalia Times: One of the Lindsay fruit exchanges has received complete returns on the crop shipped and the prices are satisfactory. There were thirty-seven cars shipped and the average price f. o. b. Lindsay was \$580 per car of 362 boxes. This figures out \$1.60 per box, and, after deducting 35 cents for packing charges and commissions, leaves the growers \$1.25

per box. The average would have been greater, but four carloads were caught out in a blizzard while on the way east and were frozen. At this price orange growing is a very profitable industry. At Bonnie Brae the net price was a few cents more per box, owing to earlier shipments.

### VENTURA.

**A GOOD SHOWING.**—F. L. Bornard of the J. K. Armsby Co. estimates the 1901 crop of this county as follows: Lima beans, 525,000 sacks; other varieties, 35,000 sacks; walnuts, 1000 tons; dried apricots, 1000 tons; dried prunes, 75 tons; honey, 12 tons; sugar beets, 140,000 tons; barley, 200,000 sacks; wheat, 150,000 sacks; hay, 10,000 tons.

**BEANS FOR EVERYBODY.**—Democrat: From a financial standpoint, the bean crop is a "huge success." The farmer makes a good interest on his investment and adds a little capital to his bank account every time he threshes out his crop. The freighter from the ranch to warehouse receives his proportion, and the storage charged helps to enrich the warehouseman. Hand picking gives employment to a large number of unemployed. Since Dec. 1 George C. Power and R. C. Sudden, representing several large ranches, have distributed thousands of dollars among laborers of Ventura, which represents the picking of from 75,000 to 100,000 sacks of beans.

### YOLO.

**WINTER IRRIGATION.**—Sutter Farmer: The Yolo orchard and vineyard, near Woodland, is being irrigated, as the manager, Mr. LaRue, believes in winter irrigation. The pump, with a capacity of 5000 gallons a minute, is run by a 54 H. P. engine, which burns crude oil, the cost per hour for the oil being 40 cents. From every 110 gallons of oil he gets six gallons of asphaltum, which he mixes with coal tar, and uses the same on his fence posts and grape stakes.

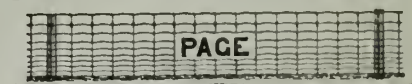
**GRAIN LOOKING WELL.**—Winters Express: The grain farmer is not in a bad way. Early fall and winter conditions were admirable, and lots of grain was sown. It came on fine, and with this ideal weather is pushing right along toward the sky. Some later sown, caught in the cold spell, lay dormant a month or more, but it is generally making up for lost time. The rain that has fallen came down so gently that scarcely a drop of it got away, and as it wet the ground much farther down than grain roots ever go, it only needs the average spring showers to insure good crops. Grass and wild feed are fine, too, and stock is in good shape. In fact prospects are good in Yolo county and Solano for more than average grain crops and general farm prosperity, if only prices would take a little inflation.

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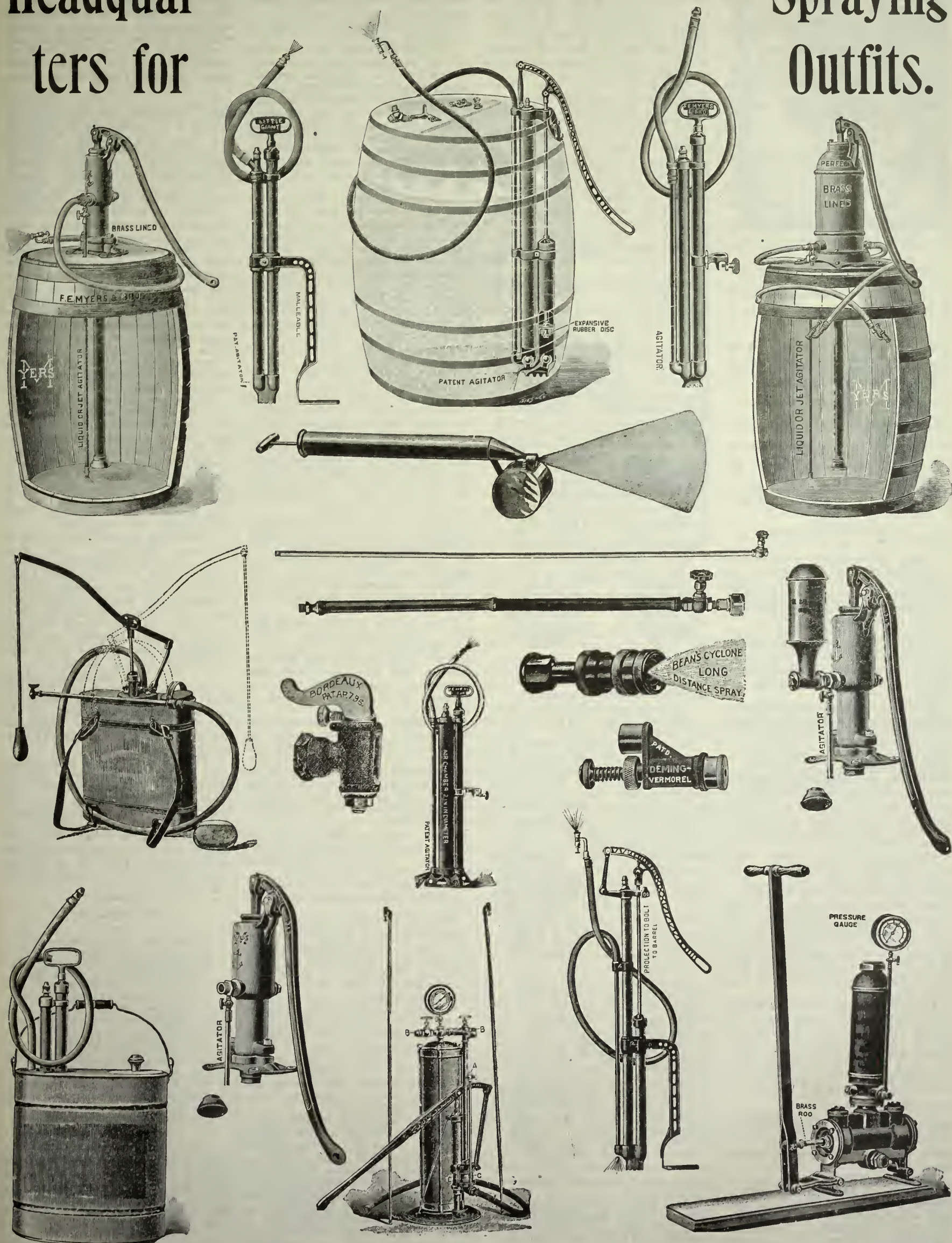
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## THE HOME CIRCLE.

## Back on the Farm.

When the roar of the city comes up from the street  
There rises a vision ineffably sweet  
Of a scene far away, of a dear, tranquil spot—  
My old childhood home that shall ne'er be forgot.  
It is long, long ago since I bade it good-by,  
With a quivering lip, with a tear in my eye,  
And through all the years that have passed comes the charm  
Of those olden, those golden days back on the farm.

Do the violets there in the meadow still grow?  
Does the little brook still through its leafy haunts flow?  
Are the fields just as green, are the forests as cool?  
Do the minnows still shimmer and flash in the pool?  
Ah, that dear scene, the fairest I ever looked on,  
I know is unchanged, though some loved ones are gone.  
It has still the old grace, it has still the old charm,  
With the world at its happiest, back on the farm.

Some day when this struggle, this turmoil, shall cease,  
And, weary, I long for a haven of peace,  
May fate guide my footsteps again to the place  
The memory of which time can never efface.  
Let me pass in its calm the last years of my life,  
Far away from the town with its feverish strife.  
May the old roof-tree shelter me, safe from all harm,  
While I rest, like a tired child, back on the farm. —Malcolm Douglas.

## At the End of the Road.

"They a'n't to know a thing about it unless they mistrust. It's to be a real surprise," said Lou Harlow, poisoning herself like one about to take flight, in the doorway of Mrs. Green's kitchen. "You must come, Mis' Green. 'T will do you good to get out. You're too much shut up. Sarrell will miss you if you don't come. She'll want to see her near neighbors, if nobody else is there. Get 'Rastus to bring you down."

Mrs. Green set the teapot further back on the stove and murmured an indefinite "M'm." The milk-house door opened with a rattle of pails. Lou's eyes turned slightly in that direction as she talked on persistently.

"Brother Ed was going to stop yesterday and invite you but he had to go another way, so I stopped in now. It's rather late to be giving invitations, I know; but it's all been planned in such a hurry that we are out and out flustered. I thought, too, that I might stir you up to coming better than Ed could. It does seem too bad not to have a lot of folks at a tin wedding surprise party. Everybody's to bring something besides refreshments, you know. I've got the cutest little oatmeal cooker at the five-cent store in the city, and I shall take that. Well, I won't hinder you any longer from your supper. Good-by. Now do come if you can. Good-by."

The kitchen door timed its closing with mathematical accuracy to the issuing of a young man from the milk-house. Through the window Mrs. Green saw Lou's innocently surprised start and cordial bow, but the bit of talk that followed was inaudible to her. She felt certain, however, that it was about the surprise party.

"If those Harlows a'n't managin'!" was her mental comment. "But it'll take more'n a pretty puttin' on to make Lou one mite engagin' to 'Rastus, I guess."

'Rastus came in presently, and, after washing at the sink, sat down to supper. He was thin and not over tall, with a vivid boyish complexion and chin like his mother's, marked by a decision that almost severe coldness of gray blue eyes accentuated. It was only when 'Rastus smiled that one knew how winning his face could be.

"Lou Harlow stopped in to ask us to

a tin weddin' surprise at her brother Will's. Probably she mentioned it to you," said Mrs. Green, as she poured the tea. "I shall have to carry some-thin' in the shape of tin. I wonder if the dipper I got of that peddler last week won't do? I took it for rags. They do pay so little for rags now, I declare it's hardly worth savin' 'em. If it hadn't been for them old overalls of yours I shouldn't made out enough to get this dipper."

"Likely they won't have more'n seven dippers," said 'Rastus, helping himself to a second dish of apple sauce. Mrs. Green looked disturbed.

"Well, dippers is handy. Every housekeeper needs two, and they use up quick. Dippers nowadays ain't what dippers used to be. There's hardly one to be got but has a weakness in the solderin'. I don't know what's more provokin' than to have a dipperful of water come splashin' on to the floor and leave nothin' but a handle in your fingers."

The quick, bright smile flashed over 'Rastus' face.

"Better carry a pan or something of that kind."

His mother took the suggestion as profoundly serious.

"I haven't one I could spare. Can't we stop for the Blake girls, 'Rastus? They like to get out, and it's rather far for 'em to walk now they're failin'. I declare it goes to my heart to see poor Miss Betsy so meechin' lately. She doesn't seem to know whether her things is on straight or not. Last Sunday 'twas all I could do to keep my mind on the sermon for wantin' to straighten her false front. 'T was twisted so the partin' was over one eye. And it's real pathetic to see Harriet hoverin' about her sister and fussin' to make her comfortable, when all the time Miss Harriet's the oldest. Miss Betsy ain't but sixty-eight. I shouldn't wonder if 't would chick 'em up consid'able to go to the surprise party this evenin'."

"Well, you can take 'em; I'll walk. 'T would be too crowding in the buggy for us all, and I don't want to get out the business wagon. There's a spoke loose."

Mrs. Green looked narrowly at him; the repose of his face indicated nothing.

"But, 'Rastus, I can't hitch old Nell. You know how she acts the minute we get out—a caperin' and pullin'."

"I'll be on hand to look out for you." 'Rastus pushed away his chair, and the door closed after him.

'Rastus was not long in finishing the chores. When he had harnessed old Nell to the Concord buggy and hitched her to the post by the back door he came in to shave. Mrs. Green was sitting by the kitchen window dressed in her best gown—a black alpaca, with fashionably large sleeves. It has just been made over, and the size of the sleeves was supposed to offset the scantness of the skirt. At any rate, as she told the neighboring dress-maker, "there wasn't any more pieces, and 't was better the scrimp'n should come in the skirt, for one's skirt didn't show in one's coffin, and if she was to die suddenly before styles changed, why, the waist would do nicely for her to be laid out in."

A moon in its second quarter was showing above the eastern horizon as 'Rastus walked across the lots after helping his mother off. Beyond, at the end of the lane, was another house, old-fashioned and yellow-painted. There lived Mr. and Mrs. English, two childless, middle-aged people. They were coming up from their house now. As he waited by the fence in the shadow of a lilac bush he could see them distinctly in the clear moonlight—two somewhat bent figures, stepping irregularly. Between them walked another figure, with youthful poises of the head and shoulders, and his heart gave a queer little jump at the sound of a girl's laugh.

"If I haven't stove my thumb into this cake," Mrs. English was saying.

"Never mind, ma. Turn it 'tother side when you hand it in, and nobody'll notice," suggested her husband.

The musical girl laugh sounded again.

"Let me carry it, Aunt Martha."

With a thrill of satisfaction 'Rastus saw the napkin-covered plate change hands. The slim, quick-stepping figure was ahead of the others now. As she reached the gate he seized the coveted opportunity, and moved forward, awkwardly snatching off his hat.

"Good evening, Miss Holland; let me open the gate for you."

Never did a gate latch so long refuse to lift; and when she had passed through was it not to pause and turn back with a pretty "Oh Dear!" How he blessed the rose branch that caught her skirt, and so held her for his releasing. "Thank you," she said demurely, looking at him with the moonlight in her eyes. Old Nell came up at a brisk trot, but Mrs. Green was alone, sitting very erect and holding the reins far apart.

"The Blake girls couldn't come. Miss Betsey had a bad turn last night, and Miss Harriet didn't want to leave her. So you see you could have rode down well enough. I know you've spoiled your new shoes a-trottin' through the wet grass 'cross lots."

"Well, you won't have to ride home alone," said 'Rastus, happily, as he helped her out. What were new shoes in comparison with that interchange of glance from a girl's eyes. "I don't believe the Harlows were very much surprised after all, mother. When I got here every window was lighted. We're early, too."

One by one, in twos and threes, and merry family loads, the guests arrived; and there was chatting and laughing and interchange of kisses among the women; an awkward standing aloof or scraps of neighborly chaff among the men, until the elder masculine element drifted to the kitchen, the younger to the long hall, and the sitting-room circle was strictly feminine.

Lou Harlow, bustling about among the guests, was more busily hostess-like than Mrs. Harlow, herself. "Sarrell never mistrusted until the last minute," she was telling every one. "When we suggested her fixing more'n usual for the evening, she said she just knew something was up."

"Yes, it was a real surprise until then," corroborated Sarrell Harlow, her usually quiet face animated. "I didn't suppose that any one would remember that Will and I have been married ten years to-day. It's real pleasant to have one's friends so thoughtful."

Mrs. Green, taking inventory of the tin things on the table, smiled benignly upon the speaker. She had found but one dipper among the pile, and, naturally, felt the prestige of being the only person who had given an unduplicated article. Mrs. Dodgson, the local merchant's wife, began talking at her elbow.

"How nice Lou Harlow looks to-night. That lace at her throat is very becoming. I hear something about her and your 'Rastus. How's that?"

Mrs. Green drew herself up stiffly. "Folks can hear a good deal," she said.

"'Rastus looks rather young to think of marrying. And Lou—why, she's—let me see." Mrs. Dodgson screwed her face into arithmetical puckers. "She's three years older 'n 'Rastus! I remember, she was born the same year as my Ameret."

"Oh, well, it's the fashion nowadays for men to marry older'n themselves," Mrs. Green answered, with a blandness borne of remembrance that Mrs. Dodgson's own son had wedded a woman ten years his senior—a widow with an overgrown daughter just entering her teens—and that the affair was very displeasing to his people.

But her neighbor's friendly inquisitiveness set her into a new train of thought. What if Lou Harlow had been the one whom 'Rastus had fancied? Before her rose a vision of heavy bread, cake smelling of saleratus, careless housekeeping—which she knew to be the rule at the Harlow homestead; she thought of what it would be to live day after day with Lou's giggling laugh, her persistent chatter and good-natured officiousness. Looking across the room at one who, but a few hours ago, she had characterized as that "flitterin' little Hol-

land girl," she noted with a stirring of pride akin to what she felt in 'Rastus the trimness of the black-gowned figure, the quiet manner, the delicate contour of a face whose prettiness did not conceal decision and capability. 'Rastus was talking with her now, his attitude marked by that new dignity which his mother had noticed of late. Something in the turn of his head reminded her of his father when he had come courting Pemigewasset way, where she lived as a girl.

When came a homeward movement among the guests, Mrs. Green paused, talking in the open door on her way out. Her quick eyes had recognized two young figures at the gate, and she turned her back upon them, barring the progress of Mr. and Mrs. English.

"I have enjoyed it all so much; haven't you Mis' English? I do think a surprise tin weddin' the best way of rememberin' the anniversary—it don't make so much work for the folks of the house. Seems to me it's a pretty long while since you and your husband have been up to take tea with me. Now why can't you be a mite more neighborly and come soon? Say Wednesday. Nothin' to hinder. Well, I'm real glad. And you are to bring your niece. Not havin' any girl of my own, I like to see a bright face like hers 'round once in a while. I guess 'Rastus must have the horse unhitched by this time. Good-night."

'Rastus was patting Nell's nose as he stood by her when his mother came out. Retta Holland was still at the gate waiting for her aunt and uncle, and Mrs. Green smiled at her as she passed. Mother and son drove along the brush-fringed lane at a plodding gait; for the old mare seemed in an indolent mood, and 'Rastus loth to urge her on. The moonlight lay white and beautiful over everything.

"I've asked Mr. and Mrs. English to tea next Wednesday," said Mrs. Green. She cleared her throat at the eager interest on 'Rastus, and added what she knew would establish perfect understanding between herself and him. "And I've asked the niece, too."

"Have you?" In 'Rastus' voice was a thrill of such happiness as comes when one is twenty-three and in love for the first time. "Have you?"

How much the boy looked like his father in spite of having her eyes and chin! Mrs. Green felt a sudden all-embracing motherliness that let the girl of his love into the depths of her heart. But she only said in a matter of fact way:

"I should think 't would be real lonesome for the Englishes, bein' as their house is where there a'n't never any passin'. I should hate to live so far from folks. I wouldn't for anything."

'Rastus turned and looked back toward the old yellow house. To him it seemed that under some circumstances he could live his whole life at the end of the road.—Mary C. Huntington in the Independent.

## Life's Philosophy.

A would not if I could repeat  
A life which still is good and sweet;  
I keep in age, as in my prime,  
A not uncheerful step with time,  
And, grateful for blessings sent,  
I go the common way, content  
To make no new experiment.  
On easy terms with law and fate,  
For what must be I calmly wait,  
And trust the path I cannot see—  
That God is good sufficeth me.  
And when at last upon life's play  
The curtain falls, I only pray  
That hope may lose itself in truth  
And age in heaven's immortal youth,  
And all our loves and longings prove  
The foretaste of diviner love.

—John Greenleaf Whittier.

MR. T. TOTALER—My dear, I do not think it very appropriate for you to wear that wine-colored silk to the W. C. T. U. convention. Mrs. T. Totaler—Oh, but it is watered silk, you know.

"HAVE you noticed the abstracted air that Brinsley wears?" "Yes; and I'm afraid its catching." "Why so?" "The last time he came to my room my umbrella was abstracted, too."



## DOMESTIC ECONOMY.

## Hints to Housekeepers.

Never allow fresh meat to remain in paper; it absorbs the juices.

When an egg is partially frozen, beat the yolk separately before adding the white.

Mortar and paint may be removed from window glass with hot, sharp vinegar.

To make paper stick to a wall that has been whitewashed, wash the wall in vinegar or saleratus water.

You may avoid the unpleasantness to the eyes when peeling onions by sitting in a draught of air or by an open window or door while doing it. Holding the onions in cold water while peeling them will accomplish the same result.

To make a husky voice strong and clear, bathe the throat, chest and back morning and evening to the waistline with cold water; follow by a brisk rubbing with a rough towel. Use the voice properly. Sounds should be expelled by the abdominal muscles.

Tape measure holders appear in all sorts and conditions of designs. Composition rosy-cheeked apples are among these novelties. A realistic fly resting on the fruit serves as a holder by which to draw out the measure. In a material which is a good imitation of burnt ivory are seen a miniature statue of Liberty, busts of the famous authors, including the Immortal Bard, and various bird and animal designs, each of which contains a tape measure ingeniously set in.

Miss Parloa is the authority for reversing the long-cherished tradition of most housekeepers that prunes should be soaked several hours, or even over night, to prepare them acceptably for cooking. Instead, this well-known expert teaches that the fruit should be washed carefully in tepid water, and allowed to stand in it two or three minutes to swell. Wash in a second water, and put on at once in a saucepan with one and one-half cupfuls of cold water to one cupful of prunes. Simmer slowly for two and one-half hours. No sugar is needed, as, cooked in this way, the natural sweetness of the fruit is brought out. Other dried fruits need soaking.

Attar of roses and confections are easily prepared. The first is secured in small quantities, thus: Select two glass jars—one small enough to fit into the neck of the other. Partly fill the larger jar with fresh rose petals and invert it over the smaller, in which is placed a piece of very fine, clean sponge, which has been soaked in olive oil; prop up the two in the strong sunshine until the petals are withered, then remove and refill with the fresh; continue with all the petals that can be obtained. When the rose season is over, rinse the sponge in alcohol, and you have the essence of rose attar. If you have a large quantity of petals, you may squeeze out of the sponge the oil, which will give you, as nearly as possible, the real attar. By diluting either extract with alcohol, you will have a flavoring that is exceedingly delicious in the icing of little cakes baked in patty pans—to be served at the desert of a rose luncheon.

To make buckwheat griddle cakes, mix together four cupfuls of buckwheat flour with one scant cupful of cornmeal and an even tablespoonful of salt. Sift these ingredients together. To moisten them use five cupfuls of lukewarm water or three cupfuls of lukewarm water and two cupfuls of milk. The milk is used to give the rich brown color preferred by most people. To accomplish this many housewives use all water and add two tablespoonfuls of molasses. The milk, however, makes the cakes more delicate. Dissolve a compressed yeast cake in half a cupful of lukewarm water; add it to the other liquid. Then add the liquid gradually to the dry ingredients, beating hard meanwhile. Pour the batter into a pail that comes for the purpose, and let it rise over night. In the morning, just before baking the cakes, stir a level teaspoonful of soda into a quarter of a cupful of lukewarm water and beat

it into the batter until it foams. Then fry a test cake on a hot griddle, and, if it is too thick, add more water or milk to the batter. At least a pint of the batter should be left for the next baking, to use in place of the yeast. To renew the batter, add the ingredients in the same proportion as the first time.

## Domestic Hints.

**BEEF BROTH.**—Wash well two pounds of lean beef cut in small pieces, and put to boil in three quarts of cold water. Skim frequently while boiling, and when reduced to one quart take from pot and strain. Return to pot with half a pound of lean beef chopped fine and well mixed with three raw eggs. Beat all together and return to fire. Boil half an hour, or until clear, then strain and season to taste.

**EGG SALAD.**—Ingredients: Six hard-boiled eggs, one head of lettuce, two cupfuls of mayonnaise and one can of deviled ham. Shell the eggs, then split lengthwise without breaking the white portion, and remove the yolks. Rub the yolks and the ham together and mix with mayonnaise. Heap up the cavity in each white with this mixture, place the pieces on lettuce leaves and pour mayonnaise over the whole.

**FRENCH-FRIED POTATOES.**—Peel some potatoes and cut in finger lengths not too thick, cover with ice water, and if they are old it is better to let them stand two hours. Drain, wipe dry, and fry in boiling fat as Saratoga chips—not too many at a time. When they are a nice brown lift the basket from the fat, sprinkle with salt, shake the grease from them and remove with a skimming spoon, drain on paper and serve at once.

**CARAMEL MOUSSE.**—Stir a cupful of granulated sugar in a saucepan over the fire, constantly, until the caramel stage is reached; add gradually a cup of hot milk and stir over boiling water until the caramel is dissolved, then add a rounding teaspoonful of gelatine soaked in two tablespoonfuls of cold water and half a cup of sugar. Strain into a pan, chill and add whipped cream, flavor with vanilla and freeze. Garnish with whipped cream and sprinkle macaroon crumbs over all.

**CRANBERRY TIMBALES.**—Take two quarts of cranberries, four cups of sugar and two cups of water; wash and pick over the cranberries carefully, put them in a saucepan with two cups of water, cover and stew till tender; then strain them through a sieve, return the pulp to the saucepan and boil fifteen minutes; add the sugar and stir and boil just long enough to melt the sugar; rinse out the timbale moulds with cold water and sprinkle with granulated sugar; pour the cranberries when nearly cold into the moulds, and set in a cool place to get firm.

**BEEFSTAK AND ONIONS.**—Broil the steak over the fire, being careful to turn it often; after it is cooked place on a hot platter and put in the oven with little dabs of butter on it. Put two ounces of very finely chopped suet in a frying pan and fry a light brown; into that put three onions, sliced very fine. Cover the pan and cook until tender, then remove the cover and continue the cooking until the onions are a light brown. In serving pour the onions and gravy over the steak.

"Now, I have an impression in my head," remarked the teacher. "Can any of you tell me what an impression is?"

"Yes, I can," replied a little fellow at the foot of the class. "An impression is a dent in a soft spot."—Kansas City Star.



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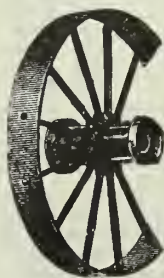
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## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, Feb. 19, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday.....	77 1/2 @ 78 1/2	78 1/2 @ 79
Thursday.....	78 1/2 @ 79	78 1/2 @ 79 1/2
Friday.....	78 1/2 @ 79	78 1/2 @ 79
Saturday.....	78 1/2 @ 79	78 1/2 @ 79
Monday.....	78 1/2 @ 79	78 1/2 @ 79
Tuesday.....	78 1/2 @ 79	78 1/2 @ 79

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday.....	42 1/2 @ 43 1/2	36 1/2 @ 37 1/2
Thursday.....	43 1/2 @ 44 1/2	36 1/2 @ 37 1/2
Friday.....	43 1/2 @ 44 1/2	36 1/2 @ 37 1/2
Saturday.....	43 1/2 @ 44 1/2	36 1/2 @ 37 1/2
Monday.....	43 1/2 @ 44 1/2	36 1/2 @ 37 1/2
Tuesday.....	43 1/2 @ 44 1/2	36 1/2 @ 37 1/2

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cent was as follows:

	May.	Dec.
Thursday.....	1 11 1/2 @ 1 10 1/2	1 11 1/2 @ 1 11
Friday.....	1 09 1/2 @ 1 10 1/2	1 10 @ 1 10 1/2
Saturday.....	1 11 1/2 @ 1 11 1/2	1 11 @ 1 10 1/2
Monday.....	1 12 1/2 @ 1 12 1/2	1 11 1/2 @ 1 12
Tuesday.....	1 12 1/2 @ 1 13 1/2	1 12 1/2 @
Wednesday.....	1 14 1/2 @ 1 13 1/2	1 13 1/2 @ 1 12 1/2

## WHEAT.

There has been no very brisk movement in this cereal in the local market since last review, but this was more in consequence of limited offerings and firm views of holders than of lack of inquiry from buyers. Both shippers and millers were in the market for wheat, but being unable to dictate their own terms, they did not purchase beyond their most immediate and urgent needs. Buyers expected an easier market on account of the recent rains which have fallen over a large portion of the State, but their expectations were not realized, at least not to their suiting. It is probable that prices would have ruled higher had there been no rain. But with an improved crop outlook, there has been a check for the time being to any marked advance in wheat values, and to this extent the buying interest has been favored. Wheat is now exceedingly low, particularly when compared with values for most other cereals. Ocean freights are weakening, however, ships having been chartered down to 25s for wheat cargoes to Europe, usual option, which gives encouragement to hope for a better market for wheat than has been lately experienced. Exporters have a lot of high priced ships on hand, however, and are trying to keep wheat down while securing cargoes. They failed to keep freights up, and it looks as though they would fail to keep wheat down. Market closed firm at the advanced quotations.

California Milling.....	1 12 1/2 @ 1 15
Cal. No. 1 shipping, alongside.....	1 10 @ 1 11 1/2
Oregon Valley.....	1 10 @ 1 12 1/2
Washington Blue Stem.....	1 10 @ 1 15
Washington Club.....	1 07 1/2 @ 1 10
Off qualities wheat.....	1 12 1/2 @ 1 07 1/2

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	68 3/4 @ 68 3/4 d	68 3/4 @ 68 3/4 d
Freight rates.....	37 1/2 @ 38 1/2 s	25 @ 26 1/4 s
Local market.....	96 1/2 @ 98 1/2	1 10 @ 1 12 1/2

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cent for the week were as follows for the options named:

May, 1902, delivery, \$1.09 1/2 @ 1.14.
December, 1902, delivery, \$1.10 @ 1.13 1/2.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.14 1/2 @ 1.13 1/2; May, 1902, \$1.13 1/2 @ 1.12 1/2.

## FLOUR.

Market continues in much the same condition as previously noted. Trade is not particularly brisk, and competition between dealers is keeping prices at lower levels than are warranted by cost of production. Especially is this the case in regard to flour which is being landed here from outside points. There is considerable flour going to Asia and South America, representing mostly deliveries on contracts.

Superfine, lower grades.....	22 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

## BARLEY.

There has been further firmness developed in this market the past week, although it is very seldom the case, with such rains as most of the State has been favored with, that there is no depressing effect experienced in the barley market, it being ordinarily exceedingly sensitive to weakening influences, and especially so at this time of year. There has been a fair shipping demand, and local requirements have been fully up to the average. Offerings have not been heavy and buyers have not been able to purchase freely, even at full current rates. Market at close was decidedly against buyers.

Feed, No. 1 to choice.....	95 @ 97 1/2
Feed, fair to good.....	92 1/2 @ 95
Brewing, No. 1 to choice.....	97 1/2 @ 1 00
Chevalier, No. 1 to choice.....	1 05 @ 1 15
Chevalier, poor to fair.....	90 @ 1 00

## OATS.

The market continued to show firmness, values remaining on a comparatively high plane, with little prospect of the situation being any more favorable to buying interest during balance of the season. There are no great quantities changing hands, however, the demand being decidedly slow at the prices now generally demanded.

White Oats, fancy feed.....	1 40 @ 1 42 1/2
White, good to choice.....	1 32 1/2 @ 1 40
White, poor to fair.....	1 25 @ 1 30
Gray, common to choice.....	1 30 @ 1 40
Milling.....	1 37 1/2 @ 1 42 1/2
Surprise, good to choice.....	1 40 @ 1 45
Black Russian.....	1 15 @ 1 32 1/2
Red.....	1 23 1/2 @ 1 40

## CORN.

Market is very lightly stocked with all descriptions, but good to choice Yellow is in scantier supply than White. Current values for desirable qualities are being well maintained, and no likelihood of any decided break in prices being soon experienced.

Large White, good to choice.....	1 35 @ 1 45
Large Yellow.....	1 35 @ 1 45
Small Yellow.....	1 50 @ 1 60

## RYE.

Offerings are not at present particularly heavy, but there is enough to satisfy the demand at full figures quoted.

Good to choice.....	87 1/2 @ 92 1/2
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## BUCKWHEAT.

There are no evidences of any business. Values remain quotably as previously noted, but are necessarily largely nominal.

Good to choice.....	1 55 @ 1 70
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## BEANS.

There are not many beans arriving from any quarter, nor is there any extensive outward movement at present, asking figures being in the main too high to enable the filling of shipping orders to any great extent, values in the East being relatively lower than those now generally current here, as based on asking rates or the views of holders. Spot stocks are not particularly heavy, and are largely in few and strong hands. It is the exception where holders are displaying any uneasiness, or where any undue pressure to realize is being exerted.

Pea, fair to good, 100 lbs.....	3 50 @ 4 00
Small White, good to choice.....	3 00 @ 3 25
Lady Washington.....	2 75 @ 3 00
Pinks.....	1 90 @ 2 15
Bayos, good to choice.....	2 35 @ 2 50
Reds.....	2 50 @ 3 00
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	4 50 @ 4 60
Black-eye Beans.....	3 50 @ 3 75
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

## DRIED PEAS.

A very quiet market is being experienced, with no changes to record in quotable rates. To effect free sales, however, full current quotations could not be obtained. Green or Blue are more difficult to place satisfactorily or at full quotations than Niles, the latter being in lightest supply.

Green Peas, California.....	1 50 @ 2 00
Niles Peas.....	1 75 @ 1 80

## WOOL.

Market is practically bare of offerings. In about a fortnight Spring wool will likely begin to put in an appearance, and not until there is enough here to warrant the attention of wholesale buyers will it be possible to give more than nominal quotations. The outlook is favorable for good to choice wools receiving prompt attention from shippers and local dealers.

## SPRING.

Southern, defective, 7 mos.....	7 @ 8
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	10 @ 12

## FALL.

Humboldt and Mendocino.....	11 @ 12
Northern Mountain, free.....	9 @ 10
Northern Mountain defective.....	8 @ 9
Middle Counties.....	8 @ 10
San Joaquin and Plains.....	6 1/2 @ 8 1/2
San Joaquin Lambs.....	7 1/2 @ 9

## HOPS.

Dealers are quoting up to 17 1/2c, but this is an asking figure from second hands and is not obtainable in a wholesale way. There are very few hops remaining in or offering from the hands of growers, and business during the balance of the season must necessarily be largely of a jobbing character. An Eastern authority, under recent date, thus sums up the situation on the Atlantic side: "Advices from the interior have been stronger of late; offerings were very light and higher prices asked. This has increased the firmness of the local market and dealers are generally holding for some advance over late quotations. A moderate quantity of stock has been taken by brewers and they have paid up to 17c usual terms for fine quality; on the open market it is doubtful that wholesale business could be done at over 16c, but at that price dealers would not part with their best growths of either State or Pacific Coast. Other grades are also held with more confidence, and the whole situation leans more in sellers' favor than at any time this season. The government report of the sale of revenue stamps for malt liquors for December indicates a consumption of 2,959,409 barrels, as compared with 2,835,075 barrels for the corresponding month last year. The figures that have been compiled for the year 1901 give the consumption as 42,671,019 barrels, compared with 40,888,768 barrels for 1900—an increase of 1,782,251 barrels."

Fair to choice, 1901 crop.....	11 @ 16
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## HAY AND STRAW.

The general features of the hay market have not changed materially since last review. There was an absence of buoyant tone, as was to have been expected after the recent rains, but quotable values have suffered no marked declines, nor is it probable that any pronounced weakness will be soon developed for stable hay of any sort. Values for Alfalfa, owing to light offerings of same, have lately inclined more in favor of the selling than of the buying interest. Straw is selling at a more than ordinarily wide range.

Wheat, good to choice.....	10 00 @ 13 50
Wheat and Oat.....	10 00 @ 13 00
Tame Oat.....	8 50 @ 11 00
Wild Oat.....	8 00 @ 10 50
Barley and Oat.....	8 00 @ 10 00
Alfalfa.....	8 00 @ 10 00
Volunteer.....	6 50 @ 9 00
Compressed.....	10 00 @ 13 50
Straw, 1/2 bale.....	40 @ 60

## MILLSTUFFS.

More firmness has been developed in the market for mill offal the current week, light receipts of the same and hardening prices for grain bringing about the result stated. Rolled Barley was very firmly held. Prices for Milled Corn continue on a high plane.

Brans, 1/2 ton.....	18 00 @ 19 00
Middlings.....	20 00 @ 22 00
Shorts, Oregon.....	19 00 @ 20 00
Barley, Rolled.....	19 50 @ 20 50
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

## SEEDS.

Mustard Seed is in light stock, with present offerings largely of the Trieste variety. Quotable values for both kinds remain without change. Alfalfa Seed market is ruling very quiet for this time of year, asking figures continuing as previously noted. The light business doing in bird seed is at generally unchanged values.

Alfalfa, Cal.....	7 25 @ 7 50
Alfalfa, Utah.....	8 25 @ 8 75
Flax.....	2 40 @ 2 60
Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 75 @ 3 00

Canary.....	3 1/2 @ 3 1/2
Rape.....	1 1/2 @ 2 1/2
Hemp.....	3 1/2 @ 3 1/2

## BAGS AND BAGGING.

The Grain Bag market is showing quiet condition, asking rates for future deliveries of Calcuttas continuing as before quoted. At a meeting of the State Board of Prison Directors the price of jute bags for the ensuing year was fixed at \$5.55 per 100. The stock of bags on hand, sold and unsold, amounts to 1,692,000 sacks, of which 367,600 are sold on undelivered orders of last year and await shipment. Orders for about 500,000 of the sacks of this year are already in, although under the rule recently passed by the Prison Directors, they could not be booked before the price of bags was fixed.

Calcutta Grain Bags, buyer June-July.....	6 @ 6 1/2
Calcutta Grain Bags, spot.....	6 1/2 @
San Francisco Grain Bags, 22x36, spot.....	@
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 3 1/2 lbs.....	23 @ 33
Fleece Twine.....	8 1/2 @
Gunnies.....	@
Bean Bags.....	5 1/2 @ 5 1/2
Fruit Sacks, cotton, three sizes.....	5 1/2, 6, 6 1/2
Fruit Sacks, Jute.....	7 @ 7 1/2

## HIDES, PELTS AND TALLOW.

The Hide market is quiet at last quoted decline. Business doing in Pelts is at prac-

tically unchanged values. Tallow is in less active request than for some time past, but is not quotably lower.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @	9 @
Medium Steers, 48 to 56 lbs.....	10 @	8 @
Light Steers, under 48 lbs.....	8 1/2 @	7 1/2 @
Heavy Cow Hides, over 50 lbs.....	9 @	8 @
Light Cow Hides, under 50 lbs.....	8 1/2 @	7 1/2 @
Stags.....	6 @ 7	@
Wet Salted Kip.....	9 @	8 @
Wet Salted Veal.....	9 @	8 @
Wet Salted Calf.....	10 @	9 @
Dry Hides.....	16 @	14 @
Dry Kip and Veal, 11 to 16 lbs.....	14 @	12 @
Dry Calf, under 4 lbs.....	18 @	15 @
Salted Horse Hides, large.....	2 75	@
Salted Horse Hides, medium.....	2 25	@
Salted Horse Hides, small.....	1 50	@
Dry Horse Hides, large.....	1 75	@
Dry Horse Hides, small.....	1 25	@
Dry Colts' Hides.....	50 @	@
Pelts, long wool, 1/2 skin.....	80 @	1 20
Pelts, medium, 1/2 skin.....	65 @	75
Pelts, short wool, 1/2 skin.....	40 @	60
Pelts, shearing, 1/2 skin.....	15 @	30
Deer Skins, good summer.....	35 @	@
Deer Skins, best medium.....	@	30
Deer Skins, thin winter.....	@	20
Elk Hides.....	10 @	12
Tallow, good quality.....	5 1/2 @	@
Tallow, No. 2.....	4 1/2 @	@
Goat Skins, perfect.....	30 @	37 1/2
Goat Skins, small.....	10 @	20
Kid Skins.....	5 @	10

## HONEY.

Spot stocks are not of heavy volume and are largely in second hands. Quotable values are without change, but owing to prospects of a light yield the coming season, the market inclines against buyers.

Extracted, White Liquid.....	5 1/2 @ 6
Extracted, Light Amber.....	4 1/2 @ 5
Extracted, Amber.....	4 @
White Comb, 1 lb frames.....	11 @ 12 1/2
Amber Comb.....	8 @ 10
Dark Comb.....	6 @ 7

## BEESWAX.

Values are being well maintained at previously quoted range. At prevailing prices buyers are not able to secure any very large quantities.

Good to choice, light, 1/2 lb.....	25 @ 28
Dark.....	24 @ 25

## LIVE STOCK AND MEATS.

Prices for Beef have continued on much the same plane as last quoted, market being fairly firm at these figures. Demand for Mutton was about equal to the immediate offerings, values ruling steady. Veal arrived sparingly and was salable to very fair advantage. Lamb was in light receipt and was favored with a stiff market. Hogs were in very moderate supply and met in most instances with ready sale at full current rates.

Beef, first quality, dressed, net 1/2 lb.....	7 @ 7 1/2
Beef, second quality.....	7 @
Beef, third quality.....	6 @ 6 1/2
Mutton—ewes, 7 @ 7 1/2 c; wethers.....	7 1/2 @ 8
Hogs, hard grain fed, 125 to 200 lbs.....	6 @ 6 1/2
Hogs, small, fat.....	6 @ 6 1/2
Hogs, large, hard, over 200 lbs.....	5 1/2 @ 5 1/2
Hogs, soft or acorn fed.....	5 @
Hogs, country dressed.....	6 1/2 @ 7
Veal, small, 1/2 lb.....	8 @ 9 1/2
Veal, large, 1/2 lb.....	8 @ 8 1/2
Lamb, spring, 1/2 lb.....	11 @ 12 1/2

## POULTRY.

There were no heavy arrivals from any source. California product was in lighter receipt than Eastern. Prices for young chickens continued at a high range, but not many were required to satisfy the demand at extreme values current. Old chickens had to be large and fat to command any special attention from buyers. The inquiry for Turkeys was not very brisk and was mainly for choice Hens. The few Ducks and Geese received met with a moderately firm market, full grown and fat young receiving the decided preference. Pigeon market was slightly better for old and firm for choice young.

Turkeys, dressed, choice.....	17 @ 19
Turkeys, alive, Hens, 1/2 lb.....	14 @ 15
Turkeys, alive, Gobbles, 1/2 lb.....	12 1/2 @ 14
Hens, California, 1/2 dozen.....	4 50 @ 6 00
Roosters, old.....	4 00 @ 4 50
Roosters, young (full-grown).....	5 50 @ 6 00
Fryers.....	5 00 @ 5 50
Broilers, large.....	4 50 @ 5 00
Broilers, small to medium.....	3 50 @ 4 00
Ducks, old, 1/2 dozen.....	5 00 @ 5 50
Ducks, young, 1/2 dozen.....	6 00 @ 7 00
Geese, 1/2 pair.....	1 50 @ 1 75
Goslings, 1/2 pair.....	2 00 @ 2 25
Pigeons, old, 1/2 dozen.....	1 25 @ 1 50
Pigeons, young.....	2 50 @ 2 75

## BUTTER.

No great quantities are arriving and more than is being received could be readily placed. While the market showed decided firmness, the strength was most pronounced on medium grades, the supply of which was lighter, as compared with the demand, than the higher priced stock.

Creamery, extras, 1/2 lb.....	28 @ 29
Creamery, firsts.....	27 @ 28



Creamery, seconds.....	25	@26
Dairy, select.....	27	@28
Dairy, firsts.....	24	@25
Dairy, seconds.....	22	@23
Mixed store.....	16	@—
Creamery in tubs.....	—	@—
Pickled Roll, # 1b.....	—	@—
Firkin, California, choice to select.....	—	@—
Firkin, common to fair.....	—	@—

## CHEESE.

Stocks of domestic are not of heavy volume and market for desirable qualities is moderately firm at ruling rates, more particularly so for mild-flavored new of high grade. Eastern cheese is higher at primary points, but is selling here at unchanged figures.

California, fancy flat, new.....	11 1/2	@12
California, good to choice.....	10 1/2	@11 1/2
California, fair to good.....	10	@10 1/2
California, "Young Americas".....	10	@12 1/2

## EGGS.

While the market is quotably lower, a fairly good shipping demand has prevented any serious breaks in prices. It is not probable, however, that current values will be long maintained. Storing will likely soon have to be resorted to in order to prevent accumulations, and values have not yet touched a safe basis for speculative operations on cold storage account.

California, select, large, white and fresh.....	21	@21 1/2
California, select, irregular color & size.....	20	@20 1/2
California, good to choice store.....	19	@20
California, common to fair store.....	—	@—
Eastern, good to choice.....	—	@—
Cold Storage.....	—	@—

## VEGETABLES.

Fresh vegetables of most kinds arrived sparingly, and were in the main favored with a firm market. Tomatoes brought nearly as good figures as preceding week. Natural Asparagus sold up to 60c. per pound, while forced growth went mainly at 40c. for No. 1, and 12 1/2 @ 15c. for No. 2. Mushrooms were in rather free receipt and went at a wide range of prices, owing to great difference in quality. Onions moved slowly most of the week, and market tended against sellers, especially for other than strictly fancy.

Beans, String, # 1b.....	10	@ 15
Beans, Wax, # 1b.....	—	@ —
Cabbage, choice garden, # 100 lbs.....	50	@ —
Cauliflower, # dozen.....	—	@ —
Cucumbers, Bay, # large box.....	—	@ —
Egg Plant, Los Angeles, # 1b.....	20	@ 25
Garlic, # 1b.....	1 1/2	@ 2 1/2
Mushrooms, # 1b.....	8	@ 20
Onions, Yellow Danver, # cental.....	1 75	@ 2 35
Peas, Sweet garden, # 1b.....	5	@ 8
Peppers, Green, Los Angeles, # 1b.....	20	@ 25
Peppers, Bell, # box.....	—	@ —
Rhubarb, # 1b.....	10	@ 12 1/2
Squash, Marrowfat, # ton.....	8 00	@ 10 00
Summer Squash, # box.....	1 75	@ 2 00
Tomatoes, Los Angeles, # box.....	1 50	@ 2 50

## POTATOES.

There were no very heavy arrivals of potatoes the current week, but receipts in connection with previous accumulations proved far ahead of the immediate requirements. Demand was not brisk, was largely on local account, and was mainly for choice to select. Only for best qualities did the market display any firmness. Sweetens were in only moderate receipt and were in the main steadily held.

Burbanks, Salinas, # 100 lbs.....	1 40	@ 1 85
River Burbanks in sacks, # cental.....	1 15	@ 1 35
Petaluma and Tomales Burbanks.....	1 25	@ 1 50
Oregon Burbanks.....	1 30	@ 1 75
River Reds.....	1 30	@ 1 50
Sweetens, Merced, # cental.....	1 50	@ —

## The Fruit Market.

## FRESH FRUITS.

Apples are not making a heavy display, and especially are high grade in limited stock. The quotable range of prices for this fruit shows no appreciable changes, but the firmness of the market is confined almost wholly to fancy 4-tier stock. Strawberries have not yet arrived in sufficient quantity to justify regular quotations. Early receipts from Santa Barbara sold up to 40c per 1-lb. basket, but later arrivals carried over were offered at 20 @ 25c. per basket.

Apples, fancy, # 4-tier box.....	1 75	@ 2 00
Apples, good to choice, # 50-lb. box.....	1 00	@ 1 50
Apples, common to fair, # 50-lb. box.....	50	@ 75

## DRIED FRUITS.

The market for dried fruits is showing in the main healthy condition, with a very fair trade for this time of year, especially considering the limited quantities of most kinds now offering or remaining in stock. It is altogether probable that there will be virtually a clean-up of most descriptions other than Prunes within the next sixty days. No very heavy outward movement during the next two months will be necessary to absorb remaining stocks of Apricots, Apples, Peaches, Pears and Plums. Values for Apricots, Pears and Plums are ruling decidedly steady, and to purchase freely of high grade stock of either variety an advance on quotations would very likely have to be paid. Apples incline against buyers, market being

firm at the rates quoted, with fair inquiry, and supplies of too moderate volume to admit of the filling of very large orders. Stocks of Peaches in the State are about 80 to 85 cars, entirely out of growers' hands, and principally in the hands of three or four holders. There is good inquiry for this fruit, with market strong at the quotations, and prospects of higher prices. Prune values are quotably unchanged, although in some instances seeming concessions are granted to buyers. It is believed that old Prunes are being masqueraded by some dealers for new, and that in this way concessions are granted which are more apparent than real. If there are any Prunes carried over they are more apt to be old than new, as stocks of the latter are now of limited volume. Of old and new Prunes it is estimated that there are not more than 425 cars left in the entire State.

## EVAPORATED OR BLEACHED.

Apricots, Royal, choice, in sacks, # 1b.....	9	@ 9 1/2
Apricots, Moorpark.....	10	@ 12
Apples, in 50-lb boxes, rings, pressed, fancy.....	8 1/4	@ 8 1/2
Apples, 50-lb boxes, rings, pressed, good to choice.....	7	@ 8
Nectarines, # 1b.....	5	@ 6
Peaches, unpeeled, fancy.....	8	@ 9
Peaches, unpeeled, choice.....	6 1/2	@ 7 1/2
Peaches, peeled, in boxes.....	12	@ 14
Pears, halves, choice to fancy.....	6 1/4	@ 8 1/4
Plums, Red and Black, pitted.....	5 1/4	@ 6 1/4
Plums, White and Yellow.....	5 1/2	@ 6 1/2
Prunes, 4 sizes, in bags, 3 1/4 @ 3 1/2 c; 50-60s, 4 1/4 @ 4 1/2 c; 60-70s, 4 @ 4 1/2 c; 70-80s, 3 1/2 @ 3 3/4 c; 80-90s, 3 @ 3 1/2 c; 90-100s, 3c @ —; these figures for 1901 crop.		

## COMMON SUN-DRIED.

Apples, sliced.....	3	@ 5
Apples, quartered.....	3 1/2	@ 4 1/2
Peaches, unpeeled.....	5	@ 6 1/2
Pears, prime halves.....	5	@ 5 1/2
Plums, unpitted, # 1b.....	1 1/4	@ 2 1/4

## RAISINS.

Market is firm at unchanged quotations. Stocks and offerings are of light proportions and are mostly in few and strong hands. Present supplies in this State are estimated at from 125 to 150 cars. No trouble is anticipated in disposing of all the present holdings within the next few months at full current prices or better.

Following are the prices for 1901 crop in carload lots:		
Loose Muscatels—		
4-crown.....	Per lb.	6 1/4
3-crown.....		6
2-crown.....		5 1/2
Seedless Muscatels.....		5 1/4
Seedless Sultanas.....		5 1/4
Thompson's Seedless.....		6 1/2
Seeded—		
3-crown, 1-lb. carton.....	7 1/2	@ 8
2-crown, 1-lb. carton.....	6 1/4	@ 6 1/2
London Layers, 20-lb. boxes—		
2-crown.....	—	—
3-crown.....	—	—

## CITRUS FRUITS.

While offerings of Oranges are of very fair volume, as compared with the demand, the proportion of choice to select stock is very light. For high-grade Navel the market is firm, such commanding extreme quotations more readily than ordinary qualities command the lower figures quoted for the latter. Lemon market is without important change, although tendency on choice to select has been to more firmness. Lower grades moved slowly at unimproved figures. Limes ruled steady at previously quoted values.

Oranges—Navels, # box.....	1 00	@ 3 00
Mediterranean Sweetens, per box.....	1 00	@ 1 50
St. Michael.....	1 00	@ 2 00
Malta Blood.....	2 00	@ 2 50
Tangerine, as to size of box.....	1 00	@ 2 00
Seedlings, # box.....	75	@ 1 25
Lemons—California, select, # box.....	2 25	@ 2 50
California, good to choice.....	1 50	@ 2 00
California, common to fair.....	75	@ 1 25
Grape Fruit, # box.....	1 00	@ 2 25
Limes—Mexican, # box.....	4 00	@ 5 00

## NUTS.

Some Almonds have changed hands within the week at terms private, but understood to be close to full current values. Present offerings are light. Not many Walnuts now in stock and they are very steadily held. Business doing in Peanuts is at generally unchanged values.

California Almonds, shelled.....	15	@ 18
California Almonds, paper shell, # 1b.....	10	@ 13
California Almonds, soft shell.....	8	@ 10
California Almonds, hard shell.....	5	@ 6
Cal. White Walnuts, No. 1 soft shell.....	9	@ 10
Cal. White Walnuts, No. 2 soft shell.....	7	@ 8
Cal. White Walnuts, No. 1 hard shell.....	8	@ 9
Cal. White Walnuts, No. 2 hard shell.....	6	@ 7
Peanuts, California, fair to prime.....	4 1/4	@ 5 1/4
Peanuts, Eastern, hand-picked.....	5 1/4	@ 6
Pine Nuts.....	5	@ 6

## WINE.

The market for wine is ruling quiet, so far as wholesale trading is concerned, quotable values being at practically the same range as for some weeks past, but, owing to absence of noteworthy transactions, quotations are for the time being based of necessity more on the views of buyers and sellers than on actual sales. Dry wines of last season's vintage are quotable wholesale at 22 @ 26c per gallon. It would be difficult to secure any of de-

sirable quality at 22c, and it would be equally difficult at the moment to place any large quantity at the extreme figure above quoted, unless the quality proved exceptionally choice.

## Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1901.	Same time last year.
Flour, # sacks.....	108,806	4,520,239	4,152,427
Wheat, centals.....	298,323	6,497,847	4,752,615
Barley, centals.....	40,486	4,844,950	2,862,385
Oats, centals.....	4,491	706,862	505,201
Corn, centals.....	2,392	75,661	78,879
Rye, centals.....	1,870	138,510	103,522
Beans, sacks.....	2,934	577,159	505,516
Potatoes, sacks.....	15,768	993,271	1,137,241
Onions, sacks.....	2,240	158,427	138,564
Hay, tons.....	2,573	100,824	114,768
Wool, bales.....	466	43,591	22,919
Hops, bales.....	29	7,415	6,905

## EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1901.	Same time last year.
Flour, # sacks.....	97,812	3,300,398	2,389,618
Wheat, centals.....	361,387	6,026,981	4,561,495
Barley, centals.....	70,277	7,737,416	1,713,822
Oats, centals.....	—	2,153	47,390
Corn, centals.....	1	8,908	2,269
Beans, sacks.....	126	19,776	10,341
Hay, bales.....	1,149	11,681	82,459
Wool, pounds.....	—	545,331	409,631
Hops, pounds.....	65	468,627	509,510
Honey, cases.....	50	5,655	1,642
Potatoes, pack's.....	2,064	41,550	91,799

## California Dried Fruit at New York.

NEW YORK, Feb. 19.—Evaporated apples, common, 7 @ 8 1/2 c; prime wire tray, 9 1/4 @ 9 1/2 c; choice, 9 1/2 @ 10 c; fancy, 10 1/2 @ 11 c.

California Dried Fruits.—Demand fair, with offerings rather light, and market moderately firm.

Prunes, 3 1/2 @ 6 1/2 c.  
Apricots, Royal, 9 1/2 @ 13 c; Moorpark, 10 @ 14 c.  
Peaches, unpeeled, 7 1/2 @ 10 c; peeled, 14 @ 18 c.

## New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

## FOR WEEK ENDING FEBRUARY 4, 1902.

692,778.—MOLDING MACHINE—Borrowe & Lumley, S. F.
692,618.—DISPLAY BOX—E. F. Carr, Los Angeles, Cal.
692,627.—HYDROCARBON COMPOSITION—B. B. Clawson, Oakland, Cal.
692,430.—FAN REGULATOR—A. G. Critchfield, Alto, Wash.
692,634.—METALS FROM ORES—H. Davis, Dayton, Nev.
692,666.—TRAIN ORDER BOX—I. G. Hoag, Los Angeles, Cal.
692,445.—GRASS CATCHER—O. Hoffman, Portland, Or.
692,446.—TUBE PROTECTOR—N. D. Hopkinson, Spokane, Wash.
692,518.—CARBURETOR—F. S. & W. D. Jacks, S. F.
692,672.—INSECT DESTROYER—Joost & George, Gates, Or.
692,679.—PRINTING PRESSES—E. F. Leilich, S. F.
692,680.—SEWING MACHINE—F. T. Leilich, S. F.
692,319.—SOLDERING MACHINE—A. W. Livingston, S. F.
692,320.—MUSIC LEAF TURNER—J. Lombardero, S. F.
692,538.—BICYCLE LOCK—W. H. Niemeyer, Los Angeles, Cal.
692,709.—WRENCH—G. W. Price, Los Angeles, Cal.
692,483.—STAMP BATTERY CAM—C. C. Rueger, Butte, Mont.
692,362.—FRUIT BRUSHER—H. B. Ruggles, Redlands, Cal.
692,364.—CURRENT WHEEL—P. H. Russell, Comp-tonville, Cal.
692,714.—WINDMILL—Sala & Stablie, S. F.
692,550.—KNOB—W. Scharnweber, Seattle, Wash.
692,719.—ARTIFICIAL LIMB—J. E. Seeley, Los Angeles, Cal.
692,803.—STUMP SOCKET—L. Stumpf, Los Angeles, Cal.
692,557.—DREDGER—J. A. Swenson, S. F.
692,735.—ELECTRIC SWITCH—J. R. Thompson, Portland, Or.
692,738.—GAS GENERATOR—Towne & Clough, Fresno, Cal.
692,749.—POWER TRANSMITTER—N. White, Sierra-ville, Cal.
692,396.—WAVE MOTOR—J. R. Wilcox, S. F.
692,752.—TORCH—C. G. Woodmansee, Los Angeles, Cal.
35,680.—DESIGN—P. O. DeMoss, Moro, Or.
35,668.—DESIGN—R. J. Taussig, S. F.
35,672.—DESIGN—L. D. Weeks, San Marquette, Cal.

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SAN FRANCISCO, CAL.**THE DAIRY.****Oleomargarine Bill Passes the House.**

Just after our last issue went to press the House passed the oleomargarine bill. There was no division on the final passage, the real test of strength having been made on a motion to recommit, which was defeated by a majority of 34. The provision to require the inspection and branding of renovated butter, which was adopted in Committee of the Whole, was retained on a nay and aye vote.

As finally passed, the bill is somewhat modified from the form in which it was reported from the Committee on Agriculture. It makes oleomargarine, or imitation butter or cheese transported into any State or Territory for use, sale or consumption therein, subject to the laws of such States or Territories, notwithstanding that it may be introduced in original packages, and imposes a tax of 10 cents per pound on oleomargarine made in imitation of "butter of any shade of yellow." When not made in such imitation the tax is reduced to one-fourth of 1 cent per pound.

The second section is intended to prevent dealers, hotel proprietors, restaurant and boarding house keepers from coloring the uncolored article, by making any person who colors the product and then sells or furnishes to others, a manufacturer within the meaning of the Act. Penalties for a violation of the Act are a fine of not less than \$50 nor more than \$500 and imprisonment for not less than sixty days nor more than six months.

The new section relating to the inspection and branding of renovated butter is as follows:

"That the Secretary of Agriculture

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is hereby authorized and required to make a rigid sanitary inspection to be made from time to time, and at such times as he may deem necessary, of all factories and storehouses where butter is renovated; and all butter renovated at such places shall be carefully inspected in the same manner and to the same extent and purposes that meat products are now inspected. The discovery of butter renovated shall be reported monthly. All renovated butter shall be designated as such by marks, brands and labels and the words 'renovated butter' shall be printed on all packages thereof, in such manner as may be prescribed by the Secretary of Agriculture, and shall be sold only as renovated butter. No renovated butter shall be shipped or transported from one State to another or to foreign countries unless inspected as provided in this section."

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### Tulare Grange.

To THE EDITOR:—There was a well attended meeting of the Grange on Saturday, the 15th. A committee to arrange for a Farmers' Institute was appointed, consisting of Sisters Morris, Ellsworth and Saughter and Brothers Davis and Eckles.

Some special committees made reports, including a programme of topics from March 1 to October 18.

A paper on the cultivation of cow peas was read. It was extracts from Farmers' Bulletin 98, Department of Agriculture, giving statements of yield and its value as a forage or green soiling plant. None of the members present could give any personal experience. Brother Julius Forrer, foreman of the United States Experiment Station at this place, said that it failed in the experiment at the station, but that it was sown on a sand bed and dried out. It received no irrigation.

Only one question was drawn from the question box, "What is Woman's Work in the Grange?" It was agreed woman's work is in every respect the same as man's in the Grange. Women may fill any office in the Grange, while there are several offices in it that it would be out of place for a man to fill.

The National Grange subject for the day was "How Can the Grange Best Secure Such Legislation as the Interests of Agriculture Justly Demand?" It was agreed all such legislation should be carefully considered in subordinate and State Granges, and if both united in asking for such legislation and made a fair and full presentation of their desires to the members of the Legislature their requests will, as a rule, be granted, as every Legislature is largely made up of fair, honorable men, desirous of enacting useful legislation.

The Grange subject for the day, "Woman's Property Rights in California," created much the most interest. This turned more particularly to the property rights of married women. Title 1, chapter 3, of the Civil Code of California is quite specific on the property rights of husband and wife.

The National Grange subject for consideration at the next meeting is, "How Can We Secure Greater Equality in the Matter of Taxation?"

J. T.

### Oakland Grange.

To THE EDITOR:—Oakland Grange held a very enjoyable initiation and banquet Saturday evening at I. O. O. F. Hall. The third and fourth degrees were conferred at 5 o'clock. Dinner was served at 6:30. After-dinner speeches were then made by Dr. J. C. Stout, Attorney Fred Button, Dr. N. K. Foster, Chas. W. Emery, Worthy State Master, and others, after which the following programme was rendered: Recitation, Mrs. Dow; zither solo, Miss Bacon; recitation, Miss Birdie Pilcher; vocal solo, W. D. Houx. NITA.

### New Books.

California fruit growers who are up to their eyes in the problems of marketing the immense fruit products of the State may be interested in comparing their problems with those which confront the Eastern grower. Prof. F. H. Waugh has made such a suggestive contrast possible by his new book entitled "Fruit Harvesting, Storing and Marketing." It is a very careful account of the best methods of handling fruit on a small scale, and especially for local markets, though information is also given of long distance work at the East. Price \$1.

Another book which will be suggestive of contrasts is "Asparagus; for Home Use and Market," by the Nestor of the agricultural press, Dr. F. M. Hexamer. It gives Eastern practices in detail. Price 50 cents.

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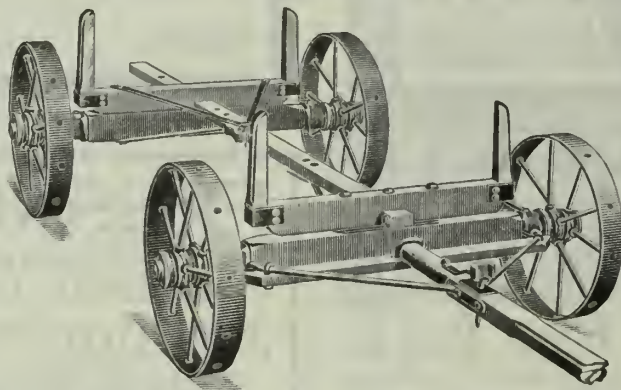
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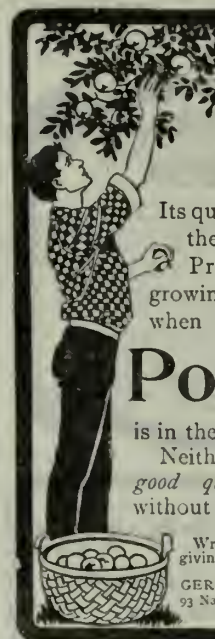
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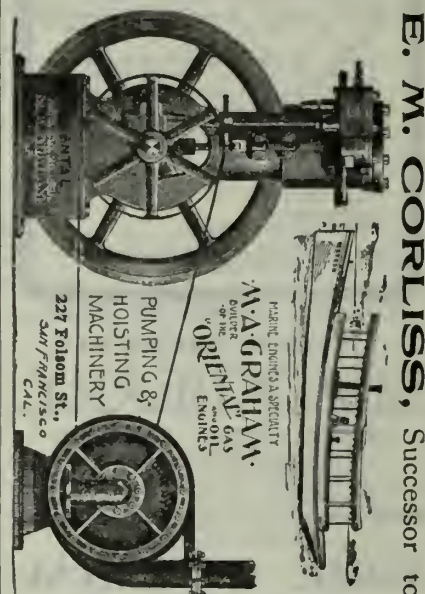
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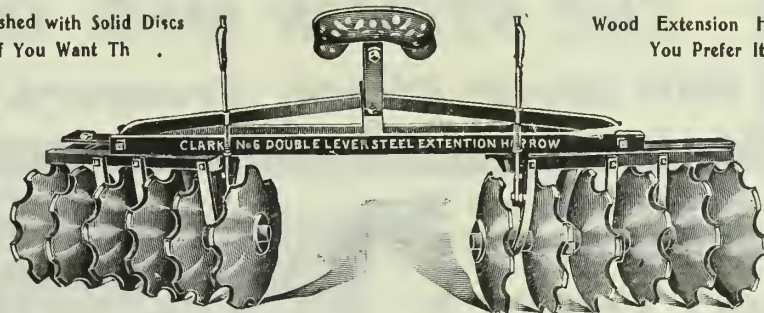
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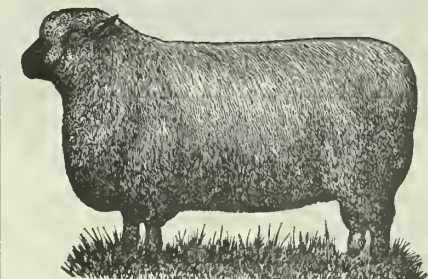
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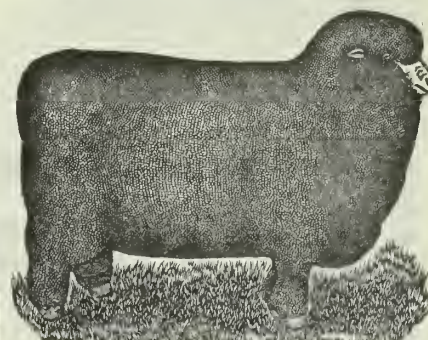
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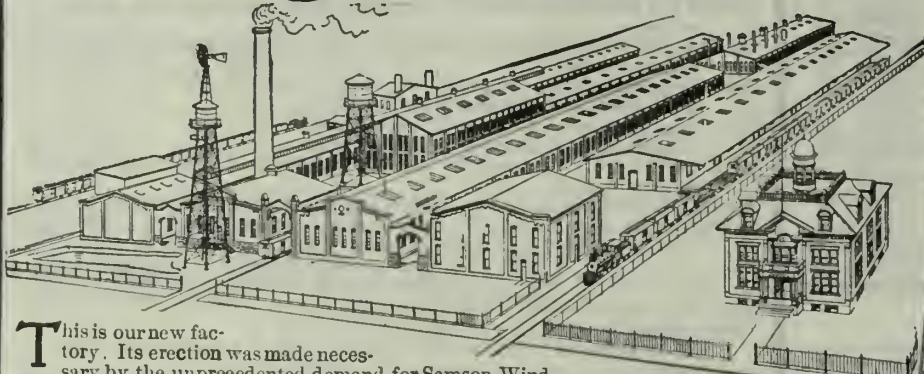


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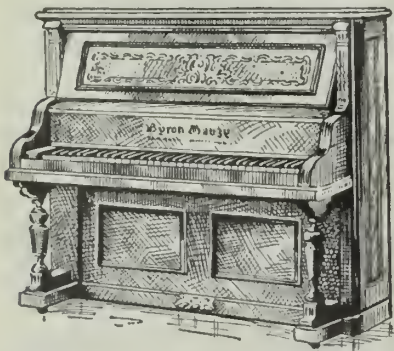
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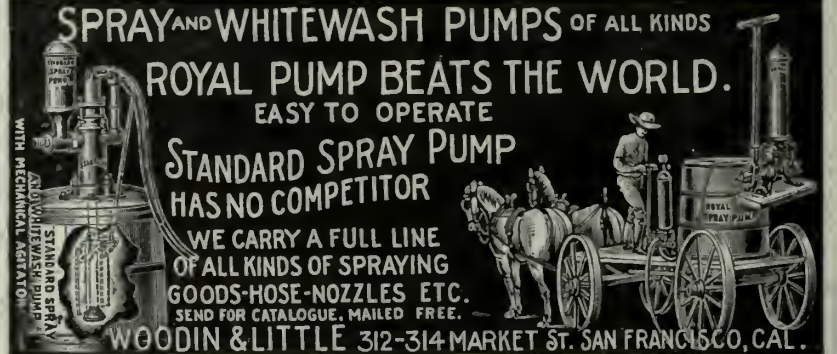
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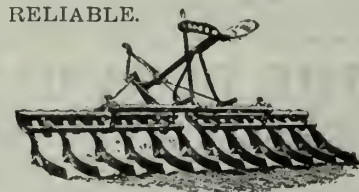
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# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

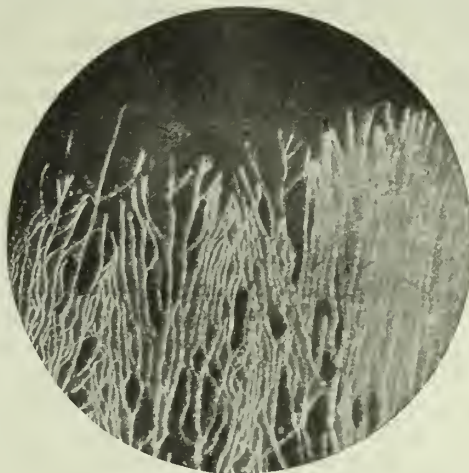
Vol. LXIII. No. 9.

SAN FRANCISCO, SATURDAY, MARCH 1, 1902.

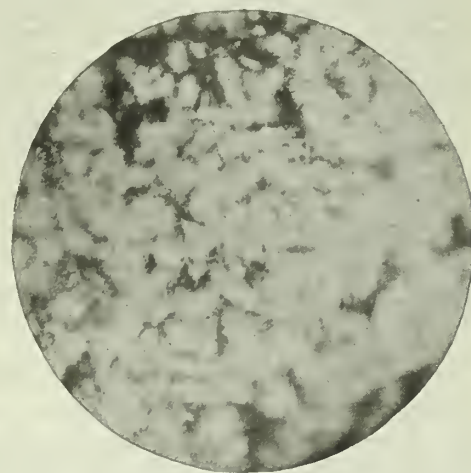
THIRTY-FIRST YEAR.  
Office, 330 Market St.

### The Rotting of Citrus Fruits.

In view of increased losses from the rotting of citrus fruits during transportation or storage, the University Experiment Station has just published a bulletin by Prof. Woodworth describing the fungus causing the decay and giving suggestions of ways in which the evil can be largely reduced. Prof. Woodworth finds the cause to be one of the blue molds, but not the same species which is common on all kinds of substances in the house hold. The species in question infests only citrus fruits, and its full name is *Pemcillium digitatum*. It grows from a spore which finds its way to the fruit, and, after germination, it proceeds through the tissue in the form of white threads which live upon the fruit juices until they reach a certain stage of development, when they grow to the surface or to some interior cavity of the fruit, and form white downy masses, commonly called white mold, and later the white masses develop short branches, on which appear large quantities of bluish green dust, like bodies which are the spores or fruit of the fungus, each of which has the power to carry and reproduce its growth whenever favorable conditions are present. This gives the fungus the color from which it is called blue or green mold, according to the color scale of the observer. The pictures used herewith, and which are reproduced from Prof. Woodworth's bulletin, show the features which we have thus briefly sketched. The practical suggestions resulting from the study of



Growing Threads of the Rot Fungus.



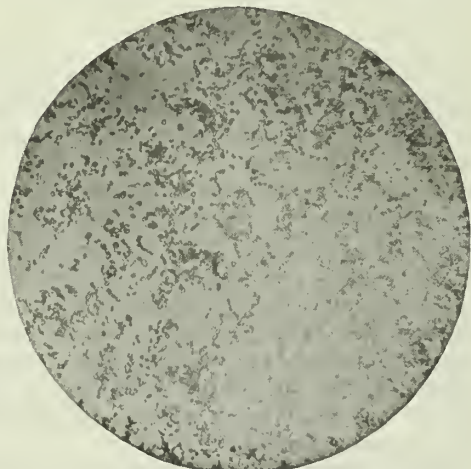
Fruiting Form of "White Mold" Under the Microscope.



Navel Orange—Skin Removed to Show Interior Decay.

the fungus are many and various. As a rule, the disease is one of the packing house, and not of the orchard, and yet Navel oranges (because of the peculiar gateway which they offer for moisture and the entrance of the fungus spores) often come from the orchard with the disease already in progress. In this case the trouble begins at the navel end and is proceeding in the interior, sometimes without outward sign or with but a slight sign in the form of a split or a drop of gum which is discernible. Two of the pictures show Navel oranges in which the fungus has made large inroads into the interior of the fruit. It appears also very often on fruit which has had the surface bruised or broken, making interior destruction below the point of entrance at the injured spot. It is not, however, dependent upon such mechanical aids. Prof. Woodworth says: "The point at which moisture will accumulate and remain longest when fruit is sweating after packing, or while it is stored in the packing or curing house, is the point where the fruit touches an adjacent fruit; and at this point, therefore, the germination of the fungus most commonly occurs."

The ways by which the injuries by the fungus may be reduced lie in preventing the access of the germs to the fruit and by prevent-

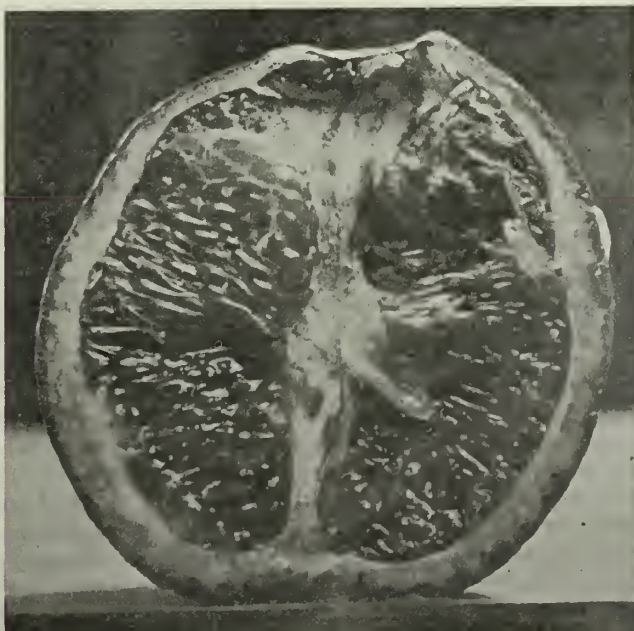


The Chains of Spores—Still More Enlarged.

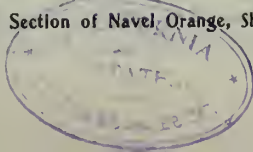
ing conditions favorable to the growth of any germs which may get there. Refrigeration may bring the temperature below the growing point of the fungus. Keeping the fruit dry by furnishing an absorptive wrapper which absorbs moisture that is formed upon the fruit is also effective, until the moisture occurs in excess of the absorptive power of the wrapper, and then decay begins. Thus, while the wrapper does act as a preventive, its effectiveness is limited. A very important effort is that of reducing the germs in the neighborhood of the fruit and thus lessening its chance of infection. Piles of decaying fruit, as they are too often found near the packing houses, are hotbeds of infection, yielding myriads of spores to the air which circulates in the packing house. Sometimes these spores are so abundant that the air has a smell of mold which nearly everybody recognizes as such. The removal of all such sources of contamination and the disinfection of the packing house with sulphur fumes whenever it can be sufficiently closed for this purpose should lessen the chances of infection. The same would be true of the storage houses of lemons.



Rotten Orange, Partly Unwrapped, Showing Mold in White and Blue Condition.



Cross Section of Navel Orange, Showing Rotten Spot.





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E. J. WICKSON. Horticultural Editor

San Francisco, March 1, 1902.

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## The Week.

The greatest storm of the year, in fact at some points the best storm, they say, for several years has been at work in California since our last issue. There was a sort of energy, as well as wetness, about it which has commanded general admiration. Over the upper two-thirds of the State it has put the crop outlook on a good basis and only reasonable activity on the part of the elements during the next few weeks will assure large outputs of all kinds. The Weather and Crop Report on the opposite page gives the details and the rainfall table measures the storm down to Wednesday morning. It will be noticed that the totals are becoming quite respectable at many points.

The heavy storm seems to have given new interest to the effort to enforce California upon the attention of the restless, home-seeking world. The Sacramento valley people seem to be fairly getting under motion and are talking very freely about how to capture the thousands who will come this spring at the cut rates which are now offered. It is well to talk and better to do something. We hope the present agitation will attain that end.

Spot wheat has held up well, only milling, which ran up rather too high a week ago, had to lose its froth. Futures have naturally receded owing to the improved outlook for a crop. Freight rates are still down to 25s. Six cargoes of wheat have cleared—18,600 tons, worth \$411,000, for Europe, and 13,200 barrels of flour for China. A cargo of rye—2833 tons, worth \$51,000—has gone to Belgium. This makes about half a million dollars' worth of breadstuffs sent out for the week. Barley has been idle and has lost about \$1 per ton on price. Corn, oats and beans are quiet and unchanged. All millfeeds, except ground corn, are lower. Hay is unsettled and naturally weaker because of the rains, but quotations are about the same, though trade is slow. Beef and fine mutton are firm; lamb is higher and hogs just steady, with receipts about equal to present use. Butter is firm and in good demand at unchanged prices. Cheese is steady for ordinary and fancy firm. Eggs are lower, as shipping has lapsed weak and unsettled. Poultry is very firm and receipts light, especially for choice, young stock. Potatoes are dragging and downward; very large receipts are in from Oregon; over 21,000 sacks by two steamers. Onions are weak, tending downward, particularly defective stock. Apples and oranges are unchanged and little strictly fine fruit here. Lemons are in about the same shape, but limes are in light stock and higher. The dried fruit market is firm for everything but prunes; supplies are shrinking and promise to clean

up well. There is small trading and small stock to trade on. Fine walnuts are firmly held. Honey is reported a little easier in tone. Hops are the same as before. The spring clip of wool began in a small way in Kern county, but was stopped by the storm. The trade is waiting for something new to deal in and prices are nominal.

Rains and larger crop prospects make it desirable to give heed to the bag supply. Some growers were caught last year because they did not apply in time for the low cost bags which the State sells only to actual growers—or tries to do so, at least. The announcement has already been made for this summer's supply. Orders for prison bags will be received from now on, the price 5½c per bag. The stock on hand consists of 1,692,000 sacks, of which orders for about half are on file. The number of bags which can be sold to one farmer is 2000, delivery made at wharf in San Francisco. Farmers desiring to obtain them should write to M. G. Aguirre, Warden of San Quentin Prison, for blank order form, embodying an affidavit to the effect that the applicant desires the bags for his individual use. Ten per cent of the purchase price has to be paid down; the bags to be shipped when the balance of the price is forwarded. There is every reason to believe that the parties who cornered the sack market last year, by obtaining the bulk of the competing prison sacks through false affidavits, have been scared out of attempting anything of the kind this year. At any rate, this can be prevented if those who wish to get the bags for their own use get their orders in early.

On Monday, March 3d, at Fresno, the Raisin Association will meet to receive the report of the committee of fifteen to whom the future of the Association was largely entrusted. It is said that this committee has accepted amendments to the constitution of the Association which will meet the objections which have been most strongly urged against the existing regime. We trust the meeting will be largely attended and some action resulting in the permanent establishment of the organization will be carried forward.

The bee and pear men are still at it in a parliamentary way at Hanford. The other day the pear men resolved that the bee men should move out, and asked them to come together to talk about it. Since then the bee people reply that they took action last summer and the pear men disregarded their invitation for a pow wow and are late now in awaking to interest in the subject. It looks as though the blossoms and the bees would have their own good time together before the higher intelligences get into working order.

The movement of hops from this coast to Australia has been checked by tariff regulations in that country. The new tariff laws of Australia, which went into effect last October, raised the hop tariff to 12 cents per pound, which is practically prohibitive. Tasmania is the only province which raises hops and these are of greatly inferior quality to Pacific coast hops, which drove them largely out of the market and compelled many farmers to give up raising them. Australian farmers have produced only about 10% of the hops consumed in that country and about 5000 bales have been imported annually from the United States. The arrest of this movement naturally has some effect upon trade here.

At the University of California summer school, which will open about July 1 at Berkeley, a beginning will be made in systematic instruction in the modern science of forestry. This is exceedingly desirable and meets a strong popular demand and may result, we hope, in the equipment of a regular department of forestry in the State University. For the coming summer school President Wheeler has secured the services of Prof. B. E. Fernow, head of the forestry department at Cornell University and formerly chief of the forestry division of the Department of Agriculture at Washington. Prof. Fernow is a well known leader in forestry affairs and his work in California should attract all who can give five or six weeks to the subject. Another announcement which will be attractive to our readers is that Prof. W. A. Henry of the Wisconsin State University and the recognized authority on animal feeding will also lecture at the Berkeley summer school on his specialty.

## QUERIES AND REPLIES.

### Orchard Plowing.

TO THE EDITOR:—How should an orchard be plowed—surface or deep plowing, and, if the latter, how deep?—A SUBSCRIBER, San Jose.

Orchard plowing should accomplish at least two things. One is to open the soil sufficiently to admit deep penetration of winter rain or irrigation and to be sure that a compact layer, often called hardpan, does not remain near the surface to check the movement of water to the subsoil. Another purpose of plowing is to cover in fully all the green stuff which has grown on the land up to plowing time. Where two plowings are given, the first should be done as early in the winter as the plow will work well to a sufficient depth to do the breaking up above mentioned. The second plowing may be shallower if the green stuff is not heavy enough to require a deep furrow to cover it in. Some growers reverse this process and plow shallow early in the winter and deep in the spring. This is often a good practice where the soil, the weed growth and the rainfall are all heavy. Where all these things are light, it is not so safe to do deep work late in the season, and deep work should come first. There can be no rule as to how deep plowing should be done. It depends upon all the things already stated. In some cases it is necessary to use a subsoiler in the center of the rows, even though some roots are lost. In other cases it is only desirable to plow deep enough to bring the surface soil into good shape—say to a depth of 6 to 9 inches.

### Dairy Propositions.

TO THE EDITOR:—How many cows can you keep on forty acres alfalfa, forty acres for barley, twenty acres beets, turnips and other feed, with thirty acres for alfalfa pasture? What would be an average price for the milk or butter fat, providing you sell it to a creamery? What would it cost to irrigate one acre alfalfa and raise the water 30 feet by steam or gasoline.—J. T. CRIMMINS, Telluride, Colo.

On the deep rich loams of the interior valley with plenty of irrigation water and with the plowed land worked for two crops a year of plants which follow each other well, it is possible to carry one cow to the acre if the enterprise is run at high pressure and plenty of work done just at the right time. If you wish to take it more easily all along the line, as it is usually done, you had better take half a cow to the acre. The profit will depend upon what kind of cows you have and how you treat them. You can get 300 pounds of butter to the cow, or half that, and your profits will be figured on that basis. A rough average value of butter fat the season through would be about 20c per pound. We cannot give you a definite figure of the cost of pumping for alfalfa. It depends upon the efficiency and skillful operation of the pump and motor. There is, however, ample evidence that there is profit in pumping for alfalfa even when done in a very crude and expensive way, and of course much more profit when the best pumps are used in the best way.

### Seed Potatoes.

TO THE EDITOR:—I have been picking over and sprouting some seed potatoes (Salinas Burbanks) which are from the size of a hen's egg to a large goose egg, and among them I find some that have a large seed end and some others just the reverse. Which of the two would you select for seed, or is there any difference, and what is the cause of this variation, or is it another strain of potato? I would judge that the first—those with the large seed end—are still progressing, or one that has not quite grown to its full size, viz., "big head," while the later, big butt end, is one that has been exhausted and also overgrown, as they have very small eyes.—GROWER, Blanco.

Both the unnatural appearances which you mention are probably indication that there is degeneration in the potatoes. All these irregular shapes should be discarded in choosing potatoes for seed, if it is possible to do so without too great sacrifice. The potato used for seed should be of the same fine shape which you desire to have in the crop. If, however, you do not feel like rejecting all the misshapen ones, use the larger parts, taking the well-developed eyes which have a good distance between them and throwing out all the seed ends, small or large. Where there are a great many eyes they all develop weak plants, make small potatoes and should not be



used. Of course, if your potatoes are running too large it might be better to take some of the smaller eyes, but if they are running small and irregular the seed ends should be rejected.

Australian Rye Grass in Various Connections.

To THE EDITOR:—In your issue of Nov. 9, 1901, I read an article on "Rye Grass in the Stockton Region" which interested me greatly, and I would like a little further information concerning it. The article said that it does best on sediment land that is too wet for alfalfa. Will it do well also on a sandy, loam sediment, river bottom land where alfalfa does so well? Will it amount to anything on a dry sandy soil? Will it make good hay? If so, could it be planted with alfalfa profitably? Would the proper cutting period for the two coincide? Would it help choke the needle grass and foxtail out of the land? Which is the better grass, the Australian or Italian? What is the best time of year to plant it and where can seed be obtained?—McCoy Fitzgerald, Redding.

Rye grass certainly will grow well on land which carries alfalfa well, but where alfalfa does well it is needless to look for a better plant. Rye grass will make a good winter growth on sandy land, but such land may be too dry in summer to keep it alive without irrigation. The hay is coarse and not of high quality. Alfalfa hay is better without any intermixture, and if we could get clean alfalfa we should prefer it. Rye grass will run out foxtail if the conditions suit it well, and we should expect to see it carry out the alfalfa also, although a deep open soil, unirrigated, but with water within reach of alfalfa roots, the alfalfa will turn the tables and run out the rye grass in the summer, because it cannot get moisture enough for an even fight. The Australian rye grass is on the whole better than the Italian for permanent growth. The seed ought to be sown at the beginning of the rainy season if it is expected to get along without irrigation, but with irrigation it can be sown at any time. Any of our advertising seedsmen can furnish the seed in any quantity. It is becoming a standard pasture grass in California and the acreage is increasing every year.

Who Wants Cottonwood?

To THE EDITOR:—I am a grain farmer, but am clearing considerable bottom land for alfalfa here on Bear river, in Sutter county. I do not intend to switch the PACIFIC RURAL PRESS off into the lumber business, yet I would like to get some points as to what we can do with the vast lot of cottonwood timber on this land we are clearing. We have no market for the wood; we do not like to cut the timber and burn or let it rot. Do you think it would make good box lumber for fruit or any other purposes. If we could interest some capitalist to start a box factory, pulp mill or excelsior works here, to work up this cottonwood on Bear and Feather rivers, do you think it would pay?—Fred Glazier, Wheatland.

We cannot tell. That is for the capitalist to decide after he has looked into the matter, and so we print your inquiry that all who have interest and capital in such undertakings can take the hint. Usually in such cases the available supply is not large enough to warrant the cost of putting in the works or else it would cost too much to collect the material at a central point. Let our readers be advised, however, that there is cottonwood to be had on Bear and Feather rivers for any profitable use to which any one can put it. Connecticut people would find it just as good as basswood for nutmeg and ham factories.

For Apple Scab.

To THE EDITOR:—Is it necessary to spray with lime, sulphur and salt for scab in apples? I sprayed with Bordeaux mixture last year, before the buds swelled, and then three times with I X L, with Paris green at intervals of two or three weeks, and I never had such a scabby lot of fruit; did not get 10% clear from most, and not 5% from Marshall's Red.—Subscriber, Alma.

The winter use of lime, salt and sulphur is for the purpose of destroying any spores of the fungus which may be passing the winter on the bark. If this is done, then the appearance of the disease on the foliage is due to new growth from the tissues of the tree or to the coming of spores from some outside source of infection—on the wings of the wind, perhaps. The winter form of Bordeaux mixture ought also to be effective in destroying the resting spores on the bark. If either of these is followed by summer use of Bordeaux mixture and Paris green, you ought to get fruit practically free from scab. This is a common experience.

Olive Pomace as a Fertilizer.

To THE EDITOR:—Have you any information on the value of the pomace from the olive press for orchard fertilization? We have a big pile of it at our new mill which I should like to use if I can do so advantageously.—Olive Grower.

The general practice of European olive growers is to return the pomace from the press to the soil and to rely upon that almost entirely for maintaining the strength of the trees. They keep few animals and do not as a rule purchase fertilizers. The pomace really contains all the fertilizing material which the tree needs, because the oil is pure carbohydrate and not derived from the soil. It is found that the material decomposes readily, the oil in the pomace being readily taken up and decomposed in the dry soil. Application to the surface, followed by shallow plowing-in of the material is a safe practice. It is not necessary to undertake composting before application.

Grafting the Walnut.

To THE EDITOR:—I have black walnut trees, twelve years old, which produce nuts; but they are nearly valueless, as there is no demand for them. I have French and English walnuts that are bringing in good returns. What is the best method of walnut grafting and the proper time to do it?—Dr. W. A. Gordon, Mountain View.

Perfectly satisfactory work can be done according to the method described and illustrated in the PACIFIC RURAL PRESS of Feb. 1 for the fig. If you prefer the cleft graft, do not split through the central pith, but at one side of it. Grafting in the bark is an escape from splitting the stock, which is an advantage with wood like that of the fig and walnut. Make a good fit and wax well and these trees will carry grafts well enough. This is the right time of the year for it.

Forage Plants for Overflowed Lands.

To THE EDITOR:—Will you let me know of some good fodder plant or grass for cattle and hogs? I have about 100 acres of low bottom land that is subject to overflow most of the winter. Part of this land has a growth of wild weeds and rosebushes and partly sandy. If there is some fodder I can grow on this land to make it of some value it will be of benefit to me.—Reader, Yuba City.

Judging from what can be seen in the overflowed lands around Stockton, the most promising plants for you to use are red and white clover and Australian rye grass. The rye grass will endure a great deal of drouth and is not injured by overflow; it will live through the season, starting early in the fall from the roots, and make good pasturage until the water rises. The clovers will live also through the summer if there is moisture enough in the land, and all three together make a very good feed for the purposes you desire.

Lecanium Pruinösom.

To THE EDITOR:—I enclose herewith a twig from our prune orchard. What is the matter, and what is the best method for the extermination of the pest? The scale was first noticed about a year ago, and since then it has increased very rapidly.—Charles Wood, Danville.

The insect is Lecanium pruinosum; it belongs to the same genus as the black scale and brown apricot scale, but has never become so widespread or injurious, though it is bad enough to make it desirable to get rid of as soon as possible. A thorough spraying with the resin wash, of which you will find the formula in "California Fruits," or the Horticultural Reports, is a good treatment for it. Winter strength of kerosene emulsion, with plenty of soap, will also be effective.

The Rose or Berry Scale.

To THE EDITOR:—I send you a sample of blackberry. Will you please let me know with what it is affected and if it will injure the fruit?—Grower, Watsonville.

The blackberry cane you send is infested with the rose scale (Diaspis rosæ), which is sometimes called the "berry scale," because it freely affects these plants also. Wherever it becomes abundant it will effect the fruit by weakening the canes, from which it draws sap very freely. The proper treatment is to clean out all the dead wood and then spray the canes which you reserve for this year's fruiting with the kerosene emulsion. The insect is quite readily killed and thorough treatment with this wash will keep it in check.

Angora Goat Pamphlet.

To THE EDITOR:—Please send me the pamphlet on the Angora goat industry of the Bureau of Animal Industry, from the Department of Agriculture.—E. R. Strain, Bolinas.

We do not have Government documents for distribution. It is often possible to get them by writing to one of the California Senators or Representatives at Washington. It is always possible to get any document you want by addressing an inquiry to the Superintendent of Documents, Union Building, Washington, D. C., who will give information of its price. All publications are sold by the Government at cost.

Peanut Crops.

To THE EDITOR:—What is the average in weight of peanuts raised to the acre in the State of California?—D. Fenton, Davisville.

The average would be something like twenty-five to thirty sacks of forty pounds each to the acre. Crops of fifty sacks are not unusual when land, care and culture are of the very best.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending February 24, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director

SACRAMENTO VALLEY.

Warm, heavy rains have continued through the greater part of the week, and farm and orchard work have been generally suspended. Rivers and creeks have risen rapidly, but no damage from overflow has been reported. The mountains are well covered with snow. Grain is in excellent condition and growing rapidly. Prospects were never better at this date for heavy crops of wheat and barley. Grain is reported "knee high" in the vicinity of Wheatland. Green feed is abundant and of excellent quality. Deciduous fruit trees and vineyards are in good condition. Early fruit trees are in bloom in some sections.

COAST AND BAY SECTIONS.

Warm weather and heavy rains in all sections during the week have been very beneficial to all growing crops. No material damage was done by the high winds. Grain is now growing rapidly and prospects are good for nearly an average crop in the southern counties, while in the central and northern counties an unusually heavy yield is predicted. Plowing and seeding are progressing in some of the southern districts. Green feed has made rapid growth and is now plentiful in all sections. Orchards and vineyards are in first-class condition, and prospects are good for large crops of deciduous fruits and grapes.

SAN JOAQUIN VALLEY.

The heaviest rain of the season has fallen during the week, extending to all parts of the valley, and the mountains are well covered with snow, insuring water for future irrigation. Warm weather has prevailed most of the week. High winds on the 21st caused but little damage. Grain and grass have been greatly benefited by the rain and warmth and are now making rapid growth. In portions of the district south of Fresno it is reported that the rain came too late to make even an average crop of wheat; but in the northern counties grain is in excellent condition and good crops are predicted. Pasturage has been greatly improved in all sections. Plowing and seeding are nearly completed. Deciduous fruit trees are budding and early varieties are in bloom. Prospects are good for a large yield.

SOUTHERN CALIFORNIA.

Warm, pleasant weather prevailed during the first of the week, with fogs along the coast. Heavy rain commenced falling Friday night, continuing through Saturday, with light showers on Sunday. All crops have been greatly benefited. Grain is in much better condition than for several weeks, and fair crops are probable in some sections. Green feed is becoming plentiful. The soil is now in good condition, and growers of beans, beets and corn are making preparations for large crops. Vineyards and deciduous fruit trees have also been greatly benefited by the rain, and good crops are probable. Shipments of citrus fruits and celery are heavy.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, February 26, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	.....	.....	37 73	30 75	..	..
Red Bluff.....	6 28	23 96	22 04	18 46	58	46
Sacramento.....	3 80	13 03	16 70	17 39	58	46
San Francisco.....	3 48	13 99	18 04	18 82	58	48
Fresno.....	1 76	4 66	9 94	9 23	62	44
Independence.....	1 20	1 87	5 76	5 03	60	28
San Luis Obispo.....	7 42	15 22	27 04	12 61	74	44
Los Angeles.....	3 08	7 31	13 66	14 10	72	46
San Diego.....	1 40	3 97	8 58	6 57	70	50
Yuma.....	1 00	.. 48	.. 14	2 54	78	42



## THE VINEYARD.

### Bench Grafting Resistant Vines.

By Mr. B. BRUCK in the St. Helena Star.

To bench-graft successfully there are several things that are particularly essential. First is a good resistant stock, which is a strong and vigorous grower, calluses well and one that will best adapt itself to that particular soil and climate of the district in which it is to be planted.

**VARIETIES.**—Of the three varieties of resistant stock which we are more familiar with in this State, i. e., Riparia, Lenoir and Rupestris St. George, we find that the Rupestris St. George has more of those good qualities combined which make it the best resistant stock we have yet experimented with in this State, and particularly for bench work.

The Riparia has not been a success in this State only under the most favorable conditions; the Lenoir, owing to the fact that it does not root easily from cuttings, its power of resistance being rather low and also that it loses considerable of its vigor and vitality after grafting, is not to be recommended, only for very fertile soil.

While we have had fair success bench grafting the Lenoir, we have had much better success with the Rupestris St. George, and prefer it to any other variety because of its superior qualities in every way. After selecting your resistant stock, the next is the vinifera scions. We have found that the heavy wooded, vigorous growing viniferas, such as the Burger, Sauvignon Vert, Golden Chasselas (Palmiro), Carignan, etc., do the best. The scions should be selected from the best shoots on strong, healthy vines and made before the sap rises in the spring—January or February. Then stored away in moist sand, not wet, in a cellar or some place where it is cold and the sun has little or no access; they will then keep dormant until late in the spring. Hill the resistant stock in anywhere outside.

**CALLUSING BED.**—Your next care should be to have a large pile of sharp, clean sand, the sharper the better, as it will not then hold too much moisture, and will obviate the covering of grafts in the callusing bed, to prevent it from becoming too wet. Have your sand pile or callusing bed sheltered from the north and with an easterly and southerly exposure. Next to decide is the ligature or tying material to be used for holding the grafts together. Experience here and in France has taught us that raffia is the best and most economical material that can be used for holding the two parts of the grafts together; but owing to the rapidity with which it will rot in moist warm soil, it is dipped in a solution of bluestone (sulphate of copper), about two grams to a quart of water, for twenty-four hours, after which it is washed in several changes of fresh water to take off the excess of bluestone, as it is claimed that bluestone will materially retard the callusing of the graft.

**MAKING GRAFTS.**—After selecting our stock scions, preparing our tying material and callusing bed, we are ready for grafting. This can be done at any time from December until April, and even later, but we have found that conditions are more favorable for success from about February 15th until March 30th.

Before beginning work provide yourself with a table, chair, a good thin-bladed knife, a pair of shears and a whetstone; three tubs of water, one for the scions, one for the grafting stock and one for the cuttings or roots when grafted. You are now ready for business. First, cut out all the eyes or buds but the lowest one from your resistant stock, or rather, from as many as you will require each day, then cut your scions in lengths of two buds each, and place them on the table before you; then make a diagonal cut about an inch to an inch and a half long through one of your grafting stock, make a split, or better, a cut-down, through the stock about or a little back of the middle, about an inch long; then take a scion of the same size. This will come easy after a little practice. Go through the same procedure with this as you did with the stock, then join them by dovetailing them together and then pushing them into place, and maintaining them there in such a manner that the bark is joined throughout the whole length, and the exterior tongues do not quite reach to the commencement of the tongue to which they are attached, and if they should pass it, cut off the protruding tongue.

This is nothing more or less than the English cleft or whip graft used by nurserymen and viticulturists, and I have gone into detail for the assistance of those who are not familiar with grafting.

**TYING THE GRAFTS.**—We have now passed through a number of the operations which belong to grafting; there remain still others as important, the next of which is the tying. There are some differences as to the best method of doing this; most authorities advise you to leave an intervening space between each turn of whatever ligature used. We have broken away from this rule and have tied our bench grafts in the following described manner: Instead of twisting our raffia, as is common, we spread it out, starting at the lower extremities of the tongues and continue wrapping until the parts that are joined to-

gether are entirely covered with one thickness of raffia. We have found that this method gives better results and the unions are more perfect.

After grafting an hour or two take the grafts from the tub where you have put them and tie them in small bundles of five to ten with the grafted parts of each vine or cutting together, irrespective of top or bottom. Then place them in rows in the sand piles at an angle of 45°. They will not require care for some time unless the weather is very dry, then keep the sand moist on top by sprinkling it occasionally. In from two to six weeks the grafts will begin to callus, depending upon the weather.

When the callus is easily distinguished at the extremities of the tongues it is then time to plant them in nursery or in field. In case the grafting is done early, the scions are very apt to throw out shoots before there is any callus, and many make the mistake of taking them out of the sand and planting them when they are in this condition. It is better to wait and depend upon dormant bud in case the shoots are well out and are broken off in handling rather than take them out before they become callused.

**PLANTING IN NURSERY.**—In planting cutting-grafts in nursery rows we have pursued the following method: After the ground is well prepared by plowing and subsoiling and well pulverized, dig a trench 1 foot wide and 14 or 16 inches deep. Dig it by a line so as to have it perfectly straight and you will facilitate the arranging and planting of the grafts when the trench is finished. Lay an inch plank along one edge, take the grafts, lay them in the trench with the top of the union at the lower edge of the plank. This is important, as it is necessary to have the unions at the same height and not have one several inches higher or lower. Now fill up the trench and hill up around the scions until there is only one bud uncovered. The grafts should be at least 4 inches apart and in rows of 4 feet.

In case the soil should be heavy it is important that sand should be thrown in the bottom of the trench and several inches placed around the union. You will be well repaid for the extra labor in receiving a larger percentage of good unions.

About July the grafts should be gone over, the scion roots and raffia cut off and the nursery well irrigated. A good way to do this is to allow the water to flow behind you in the trench it is necessary to make in order to cut roots and raffia.

**RESULTS.**—As regards the results obtained and cost incurred by the bench-graft method as compared with field work, I claim that the first mentioned method is the best, most economical and quickest way to insure a vineyard on resistant roots. And why? First, because a bench-grafted cutting will come into bearing as quickly as a simple cutting planted in the old way. Second, if the rooted cutting-grafts are properly sorted your vineyard will contain only sound vines with perfect unions. Third, it is the most economical method yet practiced, and in corroboration of this assertion I offer figures showing the actual cost and the percentage of good unions received from 20,000 cuttings grafted last spring, and compare them with the field work. From 20,000 Rupestris St. George cuttings we received 12,800 good unions or an average of 64%. The highest, 73%, from Sauvignon, Vert and Burger, and the lowest per cent from Semillon and Johannesburg Riesling. The cost of same being as follows:

Grafting, cutting buds and callusing.....	\$213 00
Planting in nursery.....	96 00
Cultivating.....	3 00
Cutting roots and irrigating.....	27 00
Taking out of nursery.....	21 00
Trimming.....	9 00
Labor.....	\$369 00
20,000 Rupestris St. George cuttings at \$12 per thousand.....	240 00
Scions.....	10 00
Raffia.....	5 00
Total cost.....	\$624 00

Now, 12,800 grafts at a cost of \$624 is at a rate of \$48.75 per thousand. Compare this with the cost of field grafting per thousand, which is as follows:

1000 Rupestris St. George cuttings.....	\$25 00
Grafting.....	10 00
Covering, etc.....	7 50
Cutting roots.....	6 00

Total labor.....	\$48 00
Scions.....	50
Tying material.....	1 00
	\$50 00

If we receive a stand of 90%, which is a very high percentage, we would still have 100 cuttings to plant the following year, which would have to be added to the first cost and would be as follows:

100 roots.....	\$2 50
Planting.....	2 00
Grafting, etc.....	3 00
	\$7 50

Add \$7.50 to the first cost and we find the cost \$57.50, and with ten vines still missing in the block of 1000 of field grafts.

Now compare the two methods: With the bench

grafts we have a solid block of 1000 vines of the same age and a uniform size at a cost of \$48.75. In the block of 1000 field grafts we have 990 vines of different ages and sizes at a cost of \$57.50. Which is to be preferred?

A. Champin, who is accredited with first having made common the methods of grafting within doors as applied to vineyard work, says: "There is a great advantage in a grafted cutting over one not grafted as concerns its rooting, for in theory the sap of the cutting when planted is drawn upon for the formation of branches at the expense of the roots. Now by interposing a joint which will momentarily retard the ascending sap, we are favoring the roots."

This has been proven in our experience. Out of good Rupestris St. George cuttings we received this year 50% of root, while on grafted Rupestris cuttings we received 64%, an advantage of 14% over the ungrafted Rupestris St. George cuttings.

## HORTICULTURE.

### Aphis-Resistant Apples From New Zealand.

TO THE EDITOR:—The intelligent interest shown by your readers in the above is very gratifying. Numerous and varied questions have reached me from private people and to save time I take the liberty of answering through the columns of your paper.

Question: "Why is it necessary to graft on Northern Spy stock if the varieties themselves are blight proof; why would they not do as well on their own roots if resistant?"

It is not an absolute necessity that the varieties be worked on the Northern Spy stock; if they were on their own roots they would be equally blight proof. This is the test to which the parent seedling was subjected to prove its resistant qualities. In the first place it was raised from a seed; where it grew it did not blight, though others of the same batch of seedlings did. The second year a cutting was taken from the top and grafted with a piece of its own root and planted in sandy soil. (Sandy soil is the worst kind for harboring aphis). Under this test it was still resistant; the next test was to graft a badly blighting variety growing among other blighted trees with several scions; the scions remained clean though the aphis came right up to the union. Other tests of the same nature follow, but under all conditions these new sorts resist the woolly aphis, therefore prove themselves clean in root and branch.

But here there must be no misunderstanding; the varieties can only be propagated by cuttings, scions or buds; it does not follow that if seeds of a resistant apple are planted a blight-proof seedling will be the result. On the contrary the bulk will blight; the resistant kinds are a rarity.

Northern Spy stocks have proved adaptable to all apples and are raised in large quantities, therefore are easily available for budding or grafting, thus the new varieties are put on this stock. Many of the new sorts have been put on their own roots, but as a rule they are not so good as on the Spy. The roots grow one-sided, or forked with no fiber, and in other ways are not as manageable as the Northern Spy.

Question: "Why not ship the trees at once?"

Because they are in full growth, and some just ripening their crops of fruit; shipping must be governed by the state of the trees to be shipped, and the dormant time is from June to September. This matter was dealt with a few weeks ago.

Question: "Is the Northern Spy a good apple?"

Yes, one of the very best apples known; it ripens here early in April; large size, yellow flesh, exquisite flavor. The tree takes from five to seven years to come into bearing, but well repays waiting. Many of the new varieties have been raised from Northern Spy seed, and they cover the whole season, giving early, medium and late sorts.

Question: "Are trees from New Zealand likely to have other scales or pests on them?"

No. The nurserymen would attend to that matter; we think stock would pass the most rigid inspection. Before shipping cases of plants are sent to a fumigating house, where they are subjected to cleansing with hydrocyanic acid gas by an official, and an official Government certificate given for same to show that they have been treated prior to shipment. Therefore there is little danger of importing pests.

Another correspondent asks for further descriptions of the varieties named. The following are notes made on trials of the various kinds:

**CARLTON.**—A seedling raised from Northern Spy. Tree blight proof; a strong, thrifty grower and most prolific bearer; fruit very large, yellow striped and suffused with carmine; flesh crisp, juicy and delicious flavor. Another valuable addition to late keeping, blight proof varieties.

**CLIMAX.**—This is a chance seedling. Fruit is above medium size and roundish. Skin clear waxy yellow, streaked and dotted on the sunny side with lively crimson. Flesh yellow, crisp, juicy, tender and of honeyed sweetness. Season of ripening between Irish Peach and Gravenstein, thus forming a valuable succession. It is a most useful early variety, both for home use and market.

**GENERAL CARRINGTON.**—Raised from Northern Spy pips. Tree of strong, vigorous, upright habit, with



beautiful foliage and perfectly blight proof. Fruit large and handsome; skin yellow, beautifully striped crimson; flesh yellowish white, rich, crisp, juicy and sugary, of delicious flavor, much like the Ribston Pippin. In use from July to September. An exceedingly prolific bearer. A valuable late keeping dessert apple of the highest excellence.

The last correspondent asks for descriptions of several other sorts, but time does not permit this mail. I will send a few more notes by next mail—three weeks later. FRANK H. LEONARD.  
Auckland, N. Z.

### More About Frost Fighting.

We have already referred to the successful experiment in warming the air recently conducted by J. P. Bolton of Fresno. Mr. Bolton, in a recent issue of the Republican, gives the following additional particulars:

In preventing frost large fires are worthless, because the heat which they produce is carried up in columns, causing indrafts of cold air from every direction. A new method of heating the lower stratum of air has been discovered, and henceforth there need be no serious loss of fruit in the average situation where there is organized preparation along lines now demonstrated to be valuable.

Frost can be successfully combatted by warming the lower stratum of air and diminishing radiation. This is accomplished by using a large number of small fires, in pots, with crude oil and cotton waste as fuel. A recent invention known as the Froude crude oil pot has been used in many districts in California with very satisfactory results. These pots are simple in construction, easily handled and inexpensive. Barrett & Hicks, having secured the make right, are turning out the pots in large numbers to meet the demands of Fresno fruit men. The pots make a hot fire, and, being covered with a lid, the heat is confined and prevented from emitting flame at the top, thus heating the heavy lower stratum of air by convection and keeping up a steady, even heat for about six hours. Thirty-five of these pots in operation over an acre of vineyard will raise the temperature near the surface 8° or 10°, making the plan at once the most satisfactory and effective means of warming orchards or vineyards yet made use of. One-half gallon of crude oil and one-fifth of a pound of cotton waste to each pot will burn steadily for six hours.

Taking twenty acres of vineyard as a basis of calculation, on which it is desired to prevent damage by frost, the installation of the necessary plant would be about as follows:

700 Froude oil pots at 20c.....	\$140 00
350 gallons of crude oil at 1½c.....	5 25
140 pounds of cotton waste at 8c.....	11 20
Total.....	\$156 70

The pots should last five years, making the average annual cost of the plant \$1.40 an acre. Three men with a wagon can load fifty acres of fire pots in a day, and eight men can light the pots over the same acreage in two hours. The facts herein given are from the best sources obtainable.

A HOT BLOWER IN USE AT SAN JOSE.—At the last meeting of the San Jose Farmers' Club, L. F. Graham, president and manager of the Flickinger Co., said that three years ago his company took up the subject of fighting frost and they have been fairly successful in protecting their orchard. He spoke at length of various experiments which he had conducted which led finally to the machine the company is now using. This consists of an ordinary fifty-gallon gasoline tank with one head removed, and so arranged that a fire can be placed therein and the smoke forced out through a pipe by means of a revolving bellows, such as blacksmiths use, being attached to an ordinary seed sower. The whole arrangement is placed on a wagon and the speed of the wheel furnishes the motive power to blow the fire and force the smoke out through the pipe. The hot smoke striking the frost on the trees evaporates the frost in the form of steam, and this steam, in connection with the smoke, at once raises the temperature several degrees in that part of the orchard. Mr. Graham said he had found these machines so efficient that he is now having eight of them built. For fuel anything that will burn gradually and emit a dense smoke may be used. Many use straw, covered with a solution of crude oil. We think one machine will protect ten acres of orchard. The fires should be kept going for, generally speaking, two hours before sunrise and one hour after.

### The Violet Tree.

TO THE EDITOR:—I do not want your readers to think for a moment that I am imposing upon them in trying to make them believe that there is really such a thing as a "violet tree," and that the latter is a new discovery in the florist line; nothing of the kind.

The violet tree, 10 to 12 inches in height, and planted in a pot, looking so handsome with its tuft of leaves and flowers drooping gracefully as a miniature palm tree, is not a new species of violet; it is simply obtained through a little trick, and such nice little violet trees to adorn the bay windows of our

habitations or the banquet table itself, can be had with very little work in the spring after the violets in the open ground have grown their runners at full length.

The way to "build up" the tree is thus: Two or three runners, at least 8 to 10 inches in length, 12 inches still better, are taken up, with good roots at one end and a tuft of leaves and buds at the other, then twisted together and finally planted upright in a 6-inch pot and tied to a stick to keep it in that position. Flat arbor! If I would be permitted to parody a most famous latin quotation, and the "tree is up"!

The ground should be made rich to feed the tree properly and make it bloom profusely. Any of your lady subscribers may try their hand at getting for themselves, even in the classic old tin can of the proper size, a tree out of our fine California violet, whose flowers at the end of their long stems make such a charming effect, drooping gently all around the head of the tree. If a runner or two should spring up from the top the ensuing spring, and sometimes they do, they may be tied to a longer stick, and so would another tier of leaves and flowers be added to the tree. Suckers, if any would grow at the foot, should be removed. FELIX GILLET.  
Nevada City, Cal., Feb. 15.

## THE POULTRY YARD.

### Poultry in the San Joaquin.

By MRS. FLORA CRAWFORD, at the Reedley Farmers' Institute.

Nearly everyone has a different method of feeding hens to make them lay, and most everyone thinks his way is best. As there are scarcely two places with similar conditions, it would be impossible to give a rule that would work the same in all places.

In the first place, the hens should have comfortable houses that are free from draughts and filth. Draughts cause more of the diseases of poultry than anything else; and when a hen takes cold her laying days are soon over. Filth is the favorite breeding place of lice, so great care should be taken to keep the poultry yards and houses clean and fresh. It is impossible for a sick or lousy hen to lay.

It is very essential that the hens have plenty of fresh, clean well water in their yard at all times. I do not think ditch water is any better for a chicken than it is for a person. If the water freezes at night we empty the trough after the chickens go to roost, and then fill it soon after they get up in the morning.

As gravel is not plentiful, we buy small oyster or sea shells and keep several boxes of them in the feed yard all the time. If the hens do not have plenty of grit and lime they will not lay well and will also eat all the eggs they can.

FEEDING.—Now I will try and tell you how we fed when we obtained the best results from our hens. There is nothing scientific about our rule, and it could probably be very much improved. But our hens laid better when we were feeding by it than they ever did at any other time, and our neighbors all wondered why our hens laid so much better than theirs.

In the morning we mix a dry feed of wheat bran, cornmeal and meat and bone meal, and enough of this is put in troughs to last the fowls all day. It is best to feed so there will be none left in the troughs over night. This feed never becomes sour, and, as the fowls do not gorge themselves, they are not troubled with enlarged craws, and they seem to be much more healthy generally.

Bone and meat meal is an excellent egg producer. I have known of several instances of a large flock of hens that almost entirely stopped laying when this meal was left out of their ration.

In the evening we give enough wheat or corn to satisfy their hunger.

It is very important that the fowls have all the fresh alfalfa they can eat. It will reduce the cost of feeding over one-third. One does not realize how much grass they eat until they try to do without it. If alfalfa can not be had, rye or some other green feed should be substituted.

"FULLER'S EARTH" is a detergent formerly much used to remove the oil and grease from woolen goods and still in use to some extent for the same purpose. Its chief present industrial use is in refining oil. Unlike true clays, it is not miscible in water and does not become a soft plaster mass. When in dry lumps, it falls to pieces in water and remains as a granular powder. It has a brown, mottled color and a soapy feel, cuts easily without grit under the knife and leaves a polished surface. It adheres but slightly to the tongue. It is easily pulverized. It contains about 25% of water, 32% of alumina and 43% of silica, but the composition varies with different specimens and the mixture can not be regarded as a definite mineral species. It is found abundantly near Bakersfield, Cal., and elsewhere in the western part of the country, though Florida is the chief source of supply in the United States.

A 6-INCH water pipe in which the ordinary water pressure is thirty pounds to the square inch will only provide water for one fire hydrant stream of 2½-inch diameter pumped up to 150 pounds pressure to the square inch. There would be a partial supply for another stream additional.

## SHEEP AND WOOL.

### Shearing and Packing Mohair.

Dr. W. C. Bailey, who handles the Eastern end of C. P. Bailey & Sons Co. of San Jose, writes for the American Angora and Stockman some practical hints which will be interesting in our parish:

It is nearing the time for shearing and our mohair growers should get the fleeces off of the Angoras in a proper manner and sort the mohair some if they wish to realize the best prices. We cannot put the fleece in as good shape as the Turks do, but we can get it into grade without much trouble.

The goats should be shorn before they commence to shed. If one has warm sheds he need not fear storms. If the old method of hand shearing is employed the shearers should be required to use shears with blades not over 5 inches long. This does away to some extent with double cutting as the point of the shears does not project so far beyond the mohair intended to be cut. Most of our breeders will, however, adopt the new shearing machine, as it does better work and the loss from double cutting is practically nothing.

When the fleeces are shorn they must be sorted. If there are tag locks, that is, pieces of mohair discolored by feces or urine, they should be separated from the rest of the fleece. All colored fleeces should be kept by themselves. I think it advisable not to break the fleece. It should be wrapped into a "bump" (not tied) and put into the baling press. All short mohair or half year's growth should be put into a lot separate from the long mohair. If some of the mohair is longer and finer than the rest it should be kept by itself. The kid hair can be kept separate from the buck and wether mohair, and the doe hair put into a parcel by itself. All of the mohair can be kept clean and free from straw, etc. If the mohair is sorted according to the grades you are publishing, it will command a better price than if it be mixed. A little care at shearing time will give our manufacturers more confidence in domestic stuff and our growers will reap the reward. If the grades published are strictly adhered to for a few years our quotations will be more accurate and there will not be so much uncertainty in the mohair markets. Kempy and low grade mohair should not be mixed with good material.

BAILING MOHAIR AND WOOL.—The present method largely in use of sacking mohair and wool for shipment to market is expensive and unnecessary.

Each wool and mohair grower should have a hand power wool baling press at his shearing place, and as fast as the animals are shorn the fleece can be collected and put into the press. Two men will do the work which sacking requires four men to do, i. e., two men will collect, tramp, press and cover with burlap about 8000 to 10,000 pounds of material a day. A bale smaller than the ordinary wool sack will contain over twice as much material.

This pressing does not injure the fiber and the materials can be examined fully as carefully as when it is sacked.

The railroad companies have to furnish extra large cars for wool sacks to be loaded into. If the bales were of standard size such as hay bales are, any car would do for wool and the freight rate would be proportionately less. As it is the grower can save the cost of his baling plant in one season by the reduction in freight rate which he receives, to say nothing of the saving in expense of handling the fleeces.

For example, the Santa Fe Railroad Co. quote a rate from El Paso, Texas, to New York City via the Gulf of Mexico:

Wool in sacks, second class, \$1.58 per hundred.

Wool in bales, third class, \$1.38 per hundred.

Or 20 cents a hundred pounds less for bales than for sacks. Suppose a bale to contain 500 pounds, which is a small bale (600 to 700 pounds is the average), the grower will save \$1 a bale, or the cost of all the handling, outside of shearing, of the fleece.

The Union Pacific Railroad Co. quote wool from Salt Lake City, Utah, to New York City: Wool in sacks, \$3.47 per hundred pounds; wool in bales, \$2.92 per hundred pounds, or 55 cents per hundred pounds less for bales than for sacks. The shipper will save \$2.75 a bale on this product. Baling will be the method employed on all ranches when these figures are carefully considered and the simplicity of the process known. One California firm has been baling their mohair upon the ranch for the last ten years and they find that they save a little more than the entire cost of sacks and sacking by the old method.

METHOD OF BALING.—A hand power press especially constructed for baling wool or a rag press can be used.

The bale can be numbered and marked and the owner knows just what kind and what amount of wool is in it.

AS BETWEEN round and square drift bolts driven into wood in holes ½ inch to ⅞ inch smaller than the bolt, engineers give preference to the round bolt. The holding power of a 1-inch bolt varies from 6000 to 15,000 pounds per lineal foot, depending on the kind of wood, the relation between diameter of hole and diameter of bolt, and the time after driving before the test is made.



## THE FIELD.

## Noxious Weeds and Their Eradication.

By J. C. McCUBBIN at the University Farmers' Institute at Reedley.

The subject to be dealt with is not a pleasant one to contemplate nor, for the writer, an easy one to treat, but we can't evade the fact that it is demanding the immediate attention of the farmers in many parts of California.

The most common kinds of obnoxious weeds in this portion of the State are Johnson grass (*Andropogon halepensis*), Bermuda grass (*Cynodon dactylon*), cockle bur (*Xanthium canadense*), and spiny clot bur (*Xanthium spinosum*).

While we readily admit the value of both the Bermuda and Johnson grasses, as well as the "foxtail" or barley grass, as forage plants, for the purpose of this article, they will be treated from the standpoint of obnoxious "weeds" only.

**JOHNSON GRASS.**—The general distribution of Johnson grass seed is carried on by our nomadic bands of sheep passing through a patch of grass shaking the mature seeds down into their wool, to be scattered along the road, or upon any land upon which they may graze for weeks or months afterwards, and perhaps a hundred miles from where the seeds grew. The specific gravity of the seed being high it is seldom spread by irrigation, as is generally supposed, yet, many a man has been very extravagant in his denunciation of the practice of irrigation on this supposition, while a few paltry dollars from some sheepman had made him a fast friend with the real enemy. Where it once gets a start it spreads rapidly if irrigated and cultivated, as each section of the jointed roots will reproduce a plant in a very short time.

The seed of the Johnson grass germinates easily, and the matter of spreading them must be carefully guarded against, but the young plant is easily killed before it has formed the jointed roots, which, I am sorry to say, occurs early in life.

In order to eradicate Johnson grass the roots must all be exposed to the summer sun at least forty-eight hours, during the time between June 15th and September 1st, or all roots cut off, say, 3 inches below the surface, and thrown out on top of the ground to dry, and no green shoots allowed to reach a height of 4 inches, but they must be cut off 3 or 4 inches below the surface, as soon as they make their appear-

ance, each week, if necessary, and this practice, begun about June 15th and continued incessantly as long as they appear, the old plant roots will soon become diseased, black spots will form upon them and, spreading, cause the entire root to decay and die, by exhausting all the nourishment accessible, and being deprived of air and sunshine with which to replenish the supply. Then the dormant seed must not be forgotten, but so soon as they send up new plants they should be promptly exterminated. In order to keep the old plants all cut off below the surface, a good sharp weed cutter is quite serviceable, but whatever instrument is used for the purpose it will be absolutely necessary to follow up with a hoe or shovel, and cut every remaining plant off, or in a short time they will have sufficiently nourished their roots, that the work already done on them will have to be gone over again, and all efforts so far will have been lost.

**BERMUDA GRASS.**—Bermuda grass is generally scattered by the jointed roots and branches of the plants, the seed seldom germinating under normal conditions, though it is a very common thing for them to germinate in the droppings from cattle that have fed on the grass, when the seed was matured. Most every one has observed that it generally spreads rapidly in pastures where cattle graze. By close observation during the past seven years, the writer has been unable to verify the prevailing idea, that Bermuda grass is spread by the seeds floating down with water when irrigating, through branches, as well as the jointed roots are frequently seen floating, and these generally attach themselves to the ground where they lodge and are soon reaching out their runners in every direction. Cultivation of this plant only tends to encourage its growth unless it be on an intensely "high pressure" plan during hot weather, and without irrigation. As the jointed roots of this plant extend only 3 or 4 inches below the surface when turned under with a plow, it can all be worked to the surface more easily than Johnson grass, as the latter sends its roots several feet below the surface, as in the case of plants several years old.

In order to eradicate Bermuda grass, all the jointed portions of the plant must be brought to the surface and detached from the moist soil, and remain at least forty-eight hours, some time between June 15 and September 1, when the hot sun will kill it. In killing Bermuda grass the ground should not be irri-

gated, but plowed up and left to dry before cultivating, then worked up nice and mellow, and, after laying about two weeks, turned over as much as possible with a plow again and then cultivated; then, two weeks after this second plowing and cultivating, go over with a shovel and remove every plant showing signs of vitality, and in two days thereafter plow and cultivate again; after two weeks more go over with a shovel again, and in two days thereafter plow and cultivate again, and, unless the ground is rather moist, a few such stirrings will so reduce the number of living plants that the shovel will be all that is necessary to use from then on until the rain comes; but it should be carefully gone over occasionally until that time. Where there are only a few small patches, they can be grubbed, hauled out and spread on the public road, not over 3 inches deep, where they will die.

This may be done in the winter time; but the ground where the grass was grubbed must be carefully watched for a long time, as you are very apt to find some sprouts that were omitted. The above methods are where one can get all the plants with the plow; but when they are growing among vines it is more difficult, and no plan has ever yet been brought to the notice of the writer by which they can be eradicated from such places, except to dig them out with a shovel as far as possible, and then weed them out from between the roots with the hands. The jointed roots of the grass will occasionally wedge in between the roots of the vine, where it will be necessary to pull some of the bark of the vine roots away to remove the grass roots; but it must be done, as one joint will produce a new plant. Then, after this operation, it will be necessary to continually watch and eradicate all plants that start again, as some will be overlooked the first time, and, generally, several successive times. It will be found that, when one considers his land cleared of these "weeds," he has just reached the critical stage of the operation, and then is the time to intensify the vigilance and redouble the efforts to make sure the success that has been so eagerly sought.

**CATTLE BURS.**—The cockle bur and spiny clotbur, being annuals, if kept from going to seed, can be killed out in one year, with the exception of such seeds as were prevented from sprouting until succeeding years; these will need attention when they appear. None of these trees grow runners or jointed roots to contend with—only their seeds reproduce.

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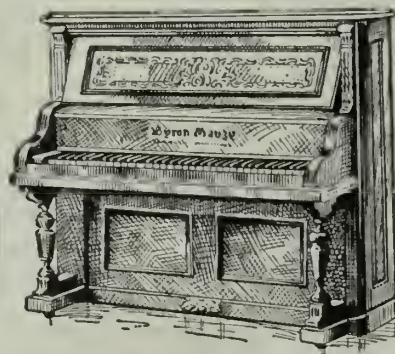
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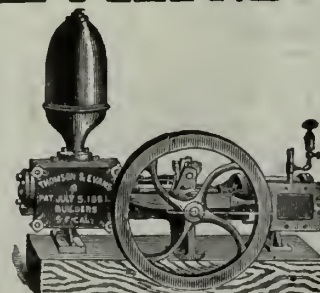
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## Agricultural Review.

### BUTTE.

**ABUNDANT FEED.**—Oroville Register: Robert Campbell of Table Mountain says the warm weather and continuous rains have been making the grass grow very rapidly. If warm weather now keeps up, feed will be very abundant in a short time.

### CONTRA COSTA.

**A BIG MORTGAGE.**—Gazette: This week the California Asparagus Co. placed on record in the recorder's office in this county a mortgage that had been given in favor of the Mercantile Trust Co. of San Francisco. The mortgage covers 3906 acres of land and takes in what is known as the Jersey Island tract. The amount of the mortgage is \$100,000.

### FRESNO.

**FERTILIZING VINES.**—Republican: McDermid Bros. have made a steady practice of cutting up finely all their grape brush as a partial recompense to the soil for the crop of grapes taken from the vines. It has been noticed that their vineyard is very thrifty and yields well. Others have decided to follow the plan. The writer remembers an orchardist who always scattered the pits of fruit that had been dried, and plowed them under on the same principle. Instead of throwing away the barnyard manure and refuse, it is noted that it is quite generally being spread among the orchard trees and vines to assist fertilization. Some are about to try green soiling by vetches, lupins, Canada peas or other plants that absorb the nitrogen from the atmosphere that plant life requires for food.

**LEMONS AND THE FOOTHILLS.**—To show what can be done with lemons in this county, Assessor Cummings recently brought in from Captain Yost's place in the foothills two trees, one of which is 13 feet high and the other 14 feet. These, he says, are actually what the foothill region can do in that kind of citrus fruit in one year.

### KERN.

**SEWAGE FOR ALKALI LAND.**—Bakersfield Californian: Six hundred and forty acres of alkali land, described as Section 6, 30-28, may soon be cultivated and irrigated by means of sewage from sewer district No. 3, which is still under discussion by the Board of Trustees, the exact boundaries having not as yet been decided upon. The alkali land in question is at the present time useless for growing purposes, but it is thought that, by means of the sewage, vegetables or alfalfa will flourish there as soon as the ground is put into condition. The Kern County Land Co., while not having as yet decided just what steps will be taken, has entered into a contract with the city of Bakersfield for the pumping of the sewage from district No. 3 onto the land on Section 6. Nothing definite will be decided upon until the formation of the district has been completed, but it is thought to be the intention of the company to bring under cultivation the entire 640 acres in the section formed. The pumping plant to be erected by the Kern County Land Co. will be similar to that now in operation at Reeder lake and will be of sufficient power to more than handle the sewage from the entire district.

### HUMBOLDT.

**CREAMERY PRICES.**—Arcata Union: Creameries in this section paid as follows for butter fat on Feb. 15: Arcata 26, Cauza Bros. 26, Premium 26½, Laurensen 26½, Minor 26. Eel River creameries paid: Abrahamsen 24, Capitol 26½, Cold Brooks 26½, Cold Spring 26½, Cream Valley (16 days) 26, (15 days) 27, Crown 27, Eel River 26, Excelsior (16 days) 26, (15 days) 27, Ferndale 26, Independent 26, Grizzly Bluff (24 days) 26, (7 days) 29, Pioneer (16 days) 26, (15 days) 28, Riverside 25.

### LOS ANGELES.

**FRUIT MEN DISCUSS PRUNES.**—Times: The farmers of Pomona had a long and interesting discussion, last Monday afternoon, upon the question of substituting crops in place of the prune orchards which are rapidly disappearing from that section. It was stated by several growers present that prunes in no case were profitable, and that if they were, southern California was not adapted to this fruit under the most favorable circumstances. One speaker said the failure was in part due to the stock used, which is the peach in most all the orchards there. The peach roots began activities before the prune tree was ready to receive the sap properly, and either forced to bloom before frost danger was over, or caused a congestion of sap which later caused disease in the crowns and roots. Messrs. Taylor and Hayes made many valuable points on substitution of tree and field crops, the latter asserting that the land south of the Southern Pacific railroad would have to

be taken out of the citrus belt. The expression was freely made that much of that magnificent land would have to be given to farm crops, and fruit that could be successfully grown. There is no better soil for grapes, peaches, apricots and many of the small fruits, and inquiries were made as to the best way to find a market for vegetables that thrive so well in this rich land.

### PLACER.

**PROFITABLE PRICES FOR ORANGES.**—Sacramento Bee: Returns on a car of California oranges sold by auction in Pittsburg, Pa., on January 8 make a very fine showing for Placer county fruit. The car referred to was from Newcastle. It was made up chiefly of Navels and Parson Browns, with a few boxes of Mediterranean Sweets. The Navels brought from \$2.10 to \$2.60 per box, the average price being \$2.33.

### SAN DIEGO.

**CATTLE THIEVES ACTIVE.**—Union: Constable Roberts of Hedges has returned home after bringing in to the county jail Angel Sanchez, a Mexican, who had been sentenced by Justice W. L. Warner to serve a sentence of ninety days and pay a fine of \$100. He was arrested for stealing cattle, but as it was feared that this charge could not be made to stick he was tried for misdemeanor and easily convicted. He had long been suspected of stealing cattle and finally the hide of a missing calf was found in his possession. The cattle raisers in that section are complaining about thieves and many losses are reported. The misdemeanor of which in a technical way Sanchez was accused was one against a peculiar statute of the State of California, which makes it an offense to kill a beef and sell the hide within ten days thereafter.

### SAN JOAQUIN.

**EXPORTING FINE DAIRY CATTLE.**—Stockton Mail: The Pierce Land & Stock Co. of this city has just shipped from its Riverside ranch on Rough and Ready island twenty-two head of fine cattle by the steamer Guatemala to Central America, where they are to be used for dairy purposes. There were three very fine heifers among these animals, namely: Star Flower Princess, No. 49646; Lady Oleander, No. 48629, and Frankette Blanco, No. 50968. There was also a fine young bull, sired by Sylvanus de Kol, dam Legal Tender. This company is having a much larger demand for its stock than it cares to supply. It proposes the coming spring to bring here some of the finest specimens that can be found in the best of Eastern herds.

### SACRAMENTO.

**ASPARAGUS ON BOULDIN ISLAND.**—Record-Union: The Golden State Asparagus Co., which was incorporated in December last, has in one body on Bouldin island, Sacramento river, 1500 acres of fine land suitable for the perfect growth and maturing of asparagus. The company has planted 370 acres to the esculent "grass," and has contracted with other parties to plant 400 more. During the past two years this company was growing and canning under the firm name of Goetjen & Metson. The yield of asparagus under good growing conditions, trimmed for the cannery, is from 4000 to 5000 pounds to the acre.

**HOPS ADVANCING IN PRICE.**—"The hop market at present is strong and prices are advancing," said a local hop buyer recently, "and I know to a certainty that some hops have been sold recently on the coast for 14 cents. I am convinced that they will go even higher, as they are bringing 14 and 18 cents in New York now, delivered, and they are even higher than this in the London market. There are no hops in first hands at the present time, either in Sonoma county or Oregon, as the raisers were in haste to sell at the early part of the season, and I think they are bitterly regretting do so now."

### SANTA BARBARA.

**CATTLE KILLED BY ACORNS.**—A dispatch from Santa Maria says that stockmen of the mountainous district east of that town report the loss of young stock from eating unripe acorns which have fallen to the ground. Older cattle are not affected to any great extent. At first it was feared that the black leg had made its appearance, but careful investigation proves otherwise.

### SONOMA.

**SHIPMENT OF DEER.**—Healdsburg Tribune: On Monday last four deer, two bucks and two does, were shipped by Wells, Fargo & Co.'s Express to Chicago. The deer were from the paddock of George Haigh of Healdsburg, who raised the beautiful animals. They are perfectly tractable and tame as kittens. The deer were placed in separate cages made of wood and interlaced with wire netting. The deer are fully grown and are fine specimens of the wild specimens of the ad-

jacent mountains. Quite a business might be instituted by some enterprising hunter in capturing some of our mountain animals alive and sending them to the Eastern zoological gardens and parks. Deer, bear, lions, lynx, etc., could be trapped and disposed of.

### STANISLAUS.

**IRRIGATION DISTRICT.**—Stockton News: The board of directors of the Modesto Irrigation District have completed arrangements for a canal system which will open up 80,500 acres to irrigation under the district system. All litigation has been compromised and the bondholders will aid the land owners in completing the system by remitting the defaulted interest and refund the bonds for forty years in a new issue at 5%. The source of supply is the Tuolumne river, and a mammoth irrigation dam has been constructed across the river, which has withstood the flood waters for ten years. It is the highest overflow dam in the United States and cost \$600,000.

### SUTTER.

**PROLIFIC SHEEP.**—Sutter County Farmer: J. L. Pottle of East Butte has a ewe in his flock of sheep that has a pretty fair family record. Last March she gave birth to two fine lambs, and in September went one better, dropping three, making a full hand of five for the year. All the lambs are strong and healthy.

**FRUIT SHIPMENTS.**—Yuba City Independent: From January 1st to December 31, 1901, according to estimates of Agent Warren, there were sent to Eastern points from Yuba City 250 carloads of canned and dried fruit and a little less than 200 cars of green fruit to local and Eastern markets. In these figures is not included shipments in less than carload lots and by Wells-Fargo Express.

**WILD DUCKS A PEST.**—The farmers along the borders of the tule are complaining of the devastation of their fields by the wild ducks. Ernest O'Banion, an extensive farmer near the tule, says the ducks light on the wheat fields at night by thousands and would totally destroy hundreds of acres, if they were not vigorously herded off by men employed for that purpose.

### TULARE.

**MORE ABOUT COYOTES.**—Register: People southwest of Tulare complain bitterly of the coyotes and declare that in another year or two it will be impossible to raise poultry. The jackrabbits are so thinned out that the coyotes are hungry and will come close to the house for something to eat. While harvesting this season, T. M. Johnson declares that he has known four or five of them to follow the harvester like dogs, to catch the jackrabbits as they emerge from the field. Something ought to be done to encourage men to make a business—anyhow, on off days—of killing coyotes. They are becoming a downright menace to prosperity.

**THAT PILLSBURY HAY.**—Mr. G. A. Upton is another citizen who has come around to the conviction that Centromadia pugnax, or the common, branching alkali weed, makes good hay. Last year he put up a good lot of such wild stuff as he could cut, and among the grasses was a considerable quantity of this sort of hay. When thrown out for feeding the young stock will go to the piles and eat all of this hay first, then eat the rest. Last year was a poor season for this sort of hay, but what he did get of it has proven very valuable, and he sees where he missed a big thing by not putting up a thousand tons or so of it when he might have done it. It would now be worth \$6 or \$8 per ton in the stack. It produces more butter fat than alfalfa and stands second to alfalfa as an all around feed, and if seed were secured and regular plantings made, experimentally, even better results than nature herself has afforded might be obtained.

### YOLO.

**TO ERADICATE GLANDERS.**—Winters Express: The Board of Supervisors met in special session Wednesday. The meeting was called for the purpose of taking measures to eradicate reported cases of glanders among horses on the Taylor farm near Woodland. Dr. McClean reported two cases of glanders in acute form on the Taylor farm, one animal having

this day been killed at his suggestion. It appearing to the Board that immediate action is necessary to eradicate this disease, it is ordered that Dr. McClean be employed until the regular meeting of the Board, to act as County Veterinarian, his salary to be at the rate of \$100 per month.

**SQUIRREL TAILS.**—Woodland Mail: Supervisor Myers regrets exceedingly that the Board has passed an ordinance revoking the bounty on squirrel tails. Mr. Myers intended urging that all of the counties in this section of the State adopt a uniform rate of bounty on squirrel tails so that there would be no inducement to hunters to ship tails secured in one county into another because the bounty in that county may be higher. He said now that Yolo county had revoked all bounty, his (Colusa) county would be overrun with squirrel tails from Yolo. The bounty in Colusa county is 2½ cents per tail.

### YUBA.

**TRAIN RUNS INTO CATTLE.**—Marysville Appeal: The northbound Oregon express ran into a band of beef cattle belonging to the Valley Meat Co. about 1 o'clock Thursday morning, killing eleven and badly injuring two. The killing took place at the Bingham canal bridge, near the Tombs place, south of town, where the cattle, who were unable to escape, were bunched up. Martin Sullivan, manager of the company, estimates the loss at \$600. W. P. Stuart, who resides at the Tombs ranch, heard the shrill whistle of the locomotive, and knowing that something was wrong hurried to the railroad track at the point noted, where he found the dead cattle. It is claimed the fences were down.

### OREGON.

**HOP GROWERS ASK LOWER RATES.**—A Portland dispatch states that the Pacific coast hop growers and dealers have petitioned for lower freight rates to the East. The petition is to the Transcontinental Freight Bureau. It has been signed by the most prominent dealers in Oregon, Washington and California and leading growers and by the hop growers' associations of the three States. A reduction of the freight rate from 2 to 1½ cents is sought.

**Horse Owners! Use**  
GOMBAULT'S  
**Caustic Balsam**  
A Safe Speedy and Positive Cure  
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

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Of fence building has been tried by thousands for 15 years. No expert help required. A careful boy can put up Cyclone Better and nearly as fast as an expert can stretch fence bought in rolls. Write for catalogue.  
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For the most practical swine paper, giving up-to-date methods and market reports, send 10 cents in silver for four months trial subscription. Regular price 50 cents a year. Address  
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**DAIRYMEN ARE DELIGHTED**  
to meet those who work for us. Cow keepers always have money. We start you in business. You make large profits. Easy work. We furnish capital. Send 10 cents for full line of samples and particulars.  
**DRAPER PUBLISHING CO., Chicago, Ills.**

**Are You a Renter?**  
Wouldn't you much rather own a farm than to rent one? Well, if you will buy one of our **Star Drilling Machines** and go to work drilling wells, in about two good seasons you can make money enough to buy a farm of your own and be independent the remainder of your days. Hundreds of other men have done this and why not you? At any rate the proposition is worth looking into. We mail catalogue, price list, etc., free. Ask for it.  
**STAR DRILLING MACHINE CO., Akron, O.**

**I SEE THE SEED DROP.**  
In plain sight of the operator.  
**MATTHEWS—Improved for 1902**  
**NEW UNIVERSAL**  
Hand Seeders and Cultivators.  
Used by the most successful gardeners. They do perfect work. Save time and money. Open furrow, drop seed, cover any desired depth, also make next row. Latest and best Cultivating Attachments. Best material throughout. Sent for Catalogue describing our full line.  
**AMES FLOW CO., 52 Market St., Boston.**



## THE HOME CIRCLE.

### The Rose and the Gauntlet.

Low spake the knight to the peasant girl:  
"I tell thee, sooth, I am belted earl;  
Fly with me from this garden small,  
And thou shalt sit in my castle's hall;  
Thou shalt have pomp and wealth and pleasure,

Joys beyond thy fancy's measure.  
Here with my sword and horse I stand,  
To bear thee away to my distant land.  
Take, thou fairest, this full-blown rose,  
A token of love that as ripely blows."

With his glove of steel he plucked the token,  
But it fell from his gauntlet, crushed and broken.

The maiden exclaimed: "Thou seest, sir knight,  
Thy fingers of iron can only smite,

And, like the rose thou hast torn and scattered,  
I in thy grasp would be wrecked and shattered."

She trembled and blushed, and her glances fell;

But she turned from the knight and said  
"Farewell!"

"Not so," he cried, "will I lose my prize;  
I heed not thy words, but I read thine eyes."

He lifted her up in his grasp of steel,  
And he mounted and spurred with furious heel;

But her cry drew forth her hoary sire,  
Who snatched his bow from above the fire;

Swift from the valley the warrior fled,  
Swifter the bolt of the cross-bow sped,  
And the weight that pressed on the fleet-foot horse

Was the living man and the woman's corse.

That morning the rose was bright of hue;  
That morning the maiden was fair to view;

But the evening sun its beauty shed  
On the withered leaves and the maiden dead.  
—John Sterling.

### Hans Mueller, Trumpeter.

Hans Mueller used to toot a trumpet in the Third cavalry. Hans was more or less of a butt for the jokes of the men of his troop. He took all kinds of gibes with a good nature that was perfect as it was stolid. The trumpeter knew more about music than he did about muskets. When for a while he tried what the other men called straight soldiering he was continually getting tangled up with equipments, and on several occasions at skirmish drill he came within an ace of shooting himself. His comrades told Hans that as long as he confined his efforts to killing himself they would offer no strenuous objection, but that if he got real careless and shot the head off some one else he must look out for trouble. As a matter of fact, he did one day come pretty close to putting a bullet through the heart of Sergeant Peter Nelson, who forthwith thrashed Hans in an approved style. Captain Roberts called Hans "gross," and said that he must stick to his trumpet.

The edict of his chief made Hans feel badly. He blew the whole scale of calls, from reveille through fatigue, recall and drill to taps, but his soul wasn't in his music. Down deep in Hans' soul there came the thought that somehow he was not like other men. The smartness of appearance which characterized Sergeant Nelson, Corporal Brady and a score of privates he knew could never be his. There was lacking in his make-up that something which gives dash to a soldier. Hans used to fall over his feet in a most unmilitary way, and his hands were never in the proper places. There was one thing, however, that could be said for him; he always tried to obey orders implicitly. He generally blundered a number of times while making the attempt, but the intent was right and that covers a multitude of sins much more serious in nature than mere blunders.

The Third cavalry was in the Wyoming country in the Elkhorn creek region. There had been a good deal of trouble with the Nez Percés and L troop had been kept on the jump most of the time for a month. L troop was Hans' outfit. There had been one constant succession of scoutings. It had been necessary to send small squads in

half a dozen different directions at one and the same time. The trumpeter had been forced to stay with the main body, which was not a very big main body at that, at all times. He had been in everything in which the whole troop was engaged, but the idea of sending Hans out on a reconnaissance where coolness and the subtlety of the devil were necessary for safety was the last thing that ever entered the head of the troop commander.

One day, however, one of the coldest days of the second winter month, it became necessary to send a scouting party to investigate the rumors of the approach of a band of savages. Now it happened that the whole command was fagged out and this in a nutshell is the reason why Hans Mueller found himself for the first time in his life in a position of acute responsibility. He was ordered by Captain Roberts to proceed with Sergeant Nelson and two privates northwest until something was "felt" or until the sergeant was satisfied that a wrong report had been turned into the camp.

When the little body set out the fatigue of the individual members of the troop showed that it was not, so to speak, strong enough to keep these same individuals from giving Hans a send-off. Hans had a carbine and a revolver. His trumpet was hanging up on a peg. One of the bystanders said to the sergeant in command: "Look out for Hans if you get into a scrimmage. The first thing you know he'll forget himself and he'll try to blow 'retreat' on his carbine. You may lose one man if Hans puts his mouth to the wrong end of the barrel."

Then they said a few other things to Hans. He was told to be sure not to get his canteen mixed up with his cartridge belt, and to make sure that he took note of the landmarks on the way out, so he could get back to camp in a hurry if he happened to hear an Indian shoot off a gun. Hans took all this well enough, because the thought of actually going out on a scout was sufficient to knock all the other things out of his head, resentment along with them. They had left the camp far behind them. Sergeant Nelson, who was an old and tried campaigner, turned to his men and said: "We are getting near the place where we may expect something." Then he spoke to Hans. "Mueller," he said, "you're not half as bad perhaps as the troops make you out, but I tell you honestly that I'm kind of afraid of you when it comes to a pinch. Do the best you can and don't run. As a matter of fact, I think Jim Crosby was pipe-dreaming when he brought the rumor of reds in this vicinity into camp, but you may have a chance to see trouble, and if you do, please stick."

That was a pretty tough thing to have to say to a soldier with Uncle Sam's uniform on his back. Stick! Mueller's face went almost white under realization that true significance of that admonition was that the sergeant had a pretty strong fear in his heart that this trumpet tooter was a coward. Stick! He would show them if he was only given a chance.

Sergeant Peter Nelson was an old and tried campaigner, indeed, but that day he made a mistake. He led his three men straight into an ambush. There was a score of painted Nez Percés straight across their track. The Indians had very little cover, but they used it so artfully that the old soldier sergeant had actually thought that the embankment and the few scattered boulders did not offer cover enough to conceal a jack rabbit.

The first intimation of the Indians' presence was a volley. Sergeant Nelson went to the ground with a wound in his side. One of the privates, shot through the shoulder and leg, fell with him. The two men crawled behind a couple of rocks and secured temporary shelter. At the savage volley Hans Mueller's heart went to his throat. With the other private who, like Hans, was unhurt, he fell back about forty yards and went behind an adequate cover. There for five minutes they exchanged shots with the reds, who, in accordance with the Indian custom, would not charge across the open, but

depended rather upon being able to pick off the soldiers, and then to go forward without danger and take the scalps. Hans found that he could use his carbine. His heart went down out of his throat. He looked around him and saw there was some chance of holding the savages off for hours. Out beyond he saw his two stricken comrades. They were not dead. He knew that, because he saw them move and occasionally weakly raise themselves and send a shot in the direction of the red foe. Hans said to himself, "Those men must be brought back here." Then he handed his carbine to his comrade and with it his belt and ammunition. "You may need these," he said, "if those fellows hit me." Then he jumped over the rock in front of him and with his long, shambling, ungainly stride he made for the side of Sergeant Nelson. The Indians pumped at him. The balls whizzed by his head, cut his clothes in three places and spat spitefully into the dust at his feet. Telling Nelson to grab his carbine, Mueller raised the sergeant in his arms and made back for cover, his track all the way marked out for him by the shots of the savages. He dropped the sergeant under the shadow of the rock and then stood on his feet.

"Where you going, Mueller?" said Sergeant Nelson, feebly.

"I'm going after Dodds," said Mueller, and he cleared the little rock to the front once more.

"God bless you, Mueller," was what he heard above the cracking of the rifles to his front. He reached the side of the wounded Dodds, raised him and started across the strip of hell. Twice he staggered, as volleys rang out, but he reached the side of his comrades and placed Dodds between Nelson and the unwounded trooper.

Then Hans Mueller fell dead.

Relief came to the three surviving cavalymen. The two wounded lived. In the little cemetery at the post in the far northwest there is a headstone which is inscribed thus:

HANS MUELLER,  
Trumpeter and Soldier.  
His Courage Was Bullet Proof.

### Beauty and Breathing.

Correct breathing is the first art to cultivate in the pursuit of beauty, just as it is the first step toward improvement in health. As a woman breathes, so she is; for the poise of the chest is the keynote to the whole figure. When the chest is in proper position the fine points of artistic wearing apparel and all the little frills of fashion are seen to best advantage. Even humble materials assume a certain elegance hitherto unknown. But if it is carried badly the figure droops and falls into ugly angles. Nothing sets well; no garment seems right. It is always wrong to make the bone structure do most of the work in keeping the body upright. The muscles should hold it in position, otherwise grace is out of the question and good health difficult. To breathe correctly, keep the chest up, out, forward, as if pulled up by a button. Keep the chin, the lips, the chest on a line. Hold the shoulders on a line with the hips. The observance of these directions will insure to golf skirts and rainy-day costumes a real dignity and picturesque effect. Breathe upward and outward, as if about to fly, drawing in the air with slow, deep breaths and letting it out gently. This conscious, deep breathing repeated ten or twenty times at intervals during the day tends to expand the chest permanently, to give it classic poise and style. Repeated forty times, it is said to be a cure for worry.—Dr. L. F. Bryson in Harper's Bazar.

"I see you are reading the dictionary. Do you find it interesting?" "No; more amusing than interesting. It spells words so different from the way I spell them."

"Jones seems rather proud of his ignorance." "Yes; well, he's got a good big lot of it."

### The Secret of Success.

One day in huckleberry time, when little Johnny Falls  
And half a dozen other boys were starting with their pails  
To gather berries, Johnny's pa, in talking with him, said  
That he could tell him how to pick so he'd come out ahead.  
"First find your bush," said Johnny's pa, "and then stick to it till  
You've picked it clean. Let others chase about you as they will  
In search of better bushes; but it's picking tells, my son—  
To look at fifty bushes doesn't count like picking one."  
And Johnny did as he was told; and, sure enough, he found,  
By sticking to his bush while all the others chased around  
In search of "better picking," it was as his father said;  
For, while the others looked, he worked, and so came out ahead.  
And Johnny recollected this when he became a man,  
And first of all he laid him out a well-determined plan.  
So, while the brilliant triflers failed with all their brains and push,  
Wise, steady-going Johnny won by "sticking to his bush."

—Nixon Waterman.

### How Clara Barton Keeps Young.

She is one of the most interesting women in the world. Over sixty-five years old, slight in build, sensitive, and nervous—and though she has seen more suffering than falls to the lot of most women, she is still young.

Her prescription for youthfulness is interesting and well worth trying, says an exchange.

"How do I stand all this wear and tear? Economy. That's it, economy. I save my strength. When I'm not working at the business which is my very life, I either rest or play. I don't potter. That's what ages women—pottering. When I see a teacher breaking down, or a trained nurse giving up with nervous prostration, I wonder when women will learn to stop pottering."

"I wouldn't sew a button on to one of my shoes for all the kingdoms of the earth. I can't afford such luxuries. A woman can't be a fine teacher, an excellent dressmaker, an expert cook, a shoe cleaner, a glove mender, a nurse, and a domestic economizer all at once. The minute she tries to do it, she breaks down, and then some one writes a brilliant article on 'Why American Women Break Down.'"

"Sleep is a great thing for women. Half the women I know don't sleep enough. I've cultivated the accomplishment of napping. I shut my eyes and go to sleep whenever there is a lull in my work."

"It isn't work that wears women out; it's fretting and pottering. The way to keep young? Stop worrying, and go to work. Throw yourself heart and soul, brain and nerve, into some one thing; make a fetish of it; throw every bit of energy you've got into it—housekeeping, taking care of children, teaching, writing, nursing, it doesn't make a bit of difference what you do; it's the way you do it that counts. Copy the first young-looking man you see; do the way he does; work when you are working, but when you are not working cultivate the art of being amused."

"HE may mean well," said the young doctor, "but I don't exactly like the tone of his letter." "What's the matter?" inquired the old practitioner. "Jones, the undertaker, writes and says that if I will send my patients to him he will guarantee them satisfaction."

TENDERFOOT (on Texas ranch): "I should think it would be a lot of trouble for a man to pick out his own cattle from among so many." Cowboy: "Oh, that's an easy matter. The trouble begins when he picks out some other man's cattle. See?"

DOCTOR—All you need now, madam, is rest. Patient—But just look at my tongue, doctor. Doctor—Well, just let that rest, too.



## DOMESTIC ECONOMY.

## Domestic Hints.

**NESTS (EGGS).**—For six people use six eggs. Toast six slices of bread cut neatly in rounds. Beat the yolks of the eggs (slightly salted) very light, heap in a circle on the toast, put one-half a teaspoonful of melted butter in the center and drop the whole yolk of one egg in the middle of each. Put them in the oven until the whites are slightly browned.

**CHICKEN BROTH.**—Cut the fowl into quarters. Lay in salted water one hour. Remove and place in three quarts of water, bringing it very slowly to a boil. Boil gently until liquor has diminished one-third. Remove chicken. Season the liquor, bring it to a boil, and strain. Stir a cupful of hot milk slowly into two beaten eggs, then add the mixture to the broth, stirring slowly. Half this quantity is sufficient to serve an invalid two or three times.

**PEAS IN POTATO CASES.**—Mash six or eight boiled potatoes. Add butter and milk in the usual way. When well mashed add a little flour to slightly stiffen them. Fill greased patty pans with the potato, putting a piece of bread in the center of each. When they are browned turn them out carefully; take out the bread and in the hollow made by it, fill with young, well-cooked peas, which have been seasoned with a little cream, pepper and salt. Serve on a hot platter.

**COTTAGE PUDDING.**—One cup of granulated sugar, a cup and a half of flour sifted, half a cup of milk, a heaping tablespoonful of butter, two eggs, whites and yolks beaten separately, a teaspoonful of baking powder mixed with the flour. Beat butter and sugar to a cream, add the well-beaten yolks of the eggs, then add milk and flour alternately by degrees, and the whites of eggs beaten to a stiff froth stirred in at the last. Bake half an hour. Serve hot with plenty of sauce.

**FARINA DUMPLINGS.**—Put half a cupful each of water and milk and a level teaspoonful of salt into a saucepan over the fire, and when boiling stir in gradually a fourth of a cupful of farina. Cook until thick, stirring constantly, then add a lump of butter size of a hickory nut and a slatpoonful each of pepper and ginger; cool slightly, add the well-beaten yolks of two eggs, and let the mixture, which may be made early, become cold. Drop from the side of teaspoon into the boiling broth, boil five minutes, then serve. These dumplings are delicious in soup.

**CHEESE CAKES.**—Put a pint of milk on to boil, beat four eggs light and stir into the milk; when it is a thick curd remove from the fire and when cool mash it very fine, add to it four ounces of breadcrumbs. Beat to a cream half a pound of butter and half a pound of sugar, add to the curds and bread; beat four eggs until very thick and light and pour them into this mixture; then add gradually one tablespoonful of sherry and one of brandy and one of rose water, and a teaspoonful of cinnamon, and lastly a quarter of a pound of currants well washed. Line either pie plates or shallow cake pans with puff paste, pour in the mixture and bake in a quick oven. They should be served cold and eaten the day they are baked.

## Hints to Housekeepers.

Wire egg beaters, according to a cooking school teacher, are the right sort to use for angel food, meringues, or other compound in which the cells are to be coarse, as these will beat the air in to inflate them. For cakes that require a fine grain the wheel beaters are to be preferred.

Cream taffy differs from butter taffy in several particulars. For one thing it is made from granulated sugar, three cupfuls of which should be added to one-half cupful of vinegar, one-half cupful of water and a piece of butter the size of a walnut. Do not stir the mixture while it boils, but when the cold water test proves it has cooked long enough flavor in any chosen way and

pour into butter pans. When cool pull until white, then cut into inch pieces with a pair of sharp scissors.

Whites or yolks of eggs can be kept separately for several days in a cold place when either are wanted for other purposes. Put the whites into a cup or small bowl and cover closely. The yolks must be covered with cold water to exclude the air and to prevent the formation of a crust. The separate yolks—in the shell or not as preferred—may be dropped into a pan of cold water, from which they can be lifted easily when needed; or, if more convenient, drop all together into a small vessel, beat until well blended, and cover with cold water. The water pours off readily when the yolks are wanted.

Cream candies in which fruits and nuts are used seem to be the most popular kinds, and every now and then some new variety is advertised by leading confectioners. Many of these can be made at home. Shredded cocoanut which comes in packages is the foundation of many so-called cream candies, and when the finest shredded quality is used, its presence is difficult to discover even by those who do not care for cocoanut. Preserved apricots are liked by some in cream candies, and a firm jelly, coated with cream and finished with chocolate, presents an opportunity to use a number of flavors and colors. When prepared for this purpose the jelly must be a great deal firmer than that used on the table. This is accomplished by using less water than the directions on the box of gelatine call for, and the right stiffness must be discovered by experiments, and the degree in which jelly hardens is largely determined by the weather.

## Dimmed Eyeglasses.

Every wearer of eyeglasses has noticed how they become dim with moisture when subjected to a sudden change of temperature, as, for instance, when the wearer goes from the cold outer air into a warm room. The reason is, of course, that the cold glass causes a condensation of the vapor with which the warm air is laden, and thus becomes coated with little globules of water. A German scientific paper says this may be prevented by rubbing the glasses with soft potash soap every morning. They may be polished bright after the soap is applied, but an invisible film is left on them that will prevent the deposit of moisture.—Can. Drug.

"This dollar," began the cashier of the restaurant, as he scrutinized the coin. "Is bad, eh?" interrupted the sour-looking patron. "Well, it doesn't look very good." "That so? Just bite it, and if it's anything like the dinner I had it'll taste even worse than it looks."

AUNT MARIA (at concert): "Josiah, what's the next thing to be done?" Uncle Josiah: "They're going to sing 'For a Thousand Years.'" Aunt Maria: "For goodness' sake, Josiah, telegraph the children what's keeping us!"

FIRST LITTLE GIRL: "The doctor brought us twins yesterday!" Second Little Girl: "That's where you made a mistake. You should have had a homeopath!"

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## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, Feb. 26, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday.....	77 3/4 @ 78 1/4	78 3/4 @ 78 3/4
Thursday.....	77 1/4 @ 78 1/4	78 @ 78 3/4
Friday.....	78 1/4 @ 77 3/4	78 1/4 @ 78
Saturday.....	77 3/4 @ 78 1/4	78 1/4 @ 78 3/4
Monday.....	77 1/4 @ 78 1/4	77 3/4 @ 78 1/4
Tuesday.....	78 1/4 @ 78 1/4	78 1/4 @ 78 3/4

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday.....	43 3/4 @ 43 3/4	36 1/4 @ 36 1/4
Thursday.....	43 1/4 @ 43 3/4	36 1/4 @ 36 3/4
Friday.....	43 3/4 @ 43 3/4	36 3/4 @ 35 3/4
Saturday.....	43 3/4 @ 43 3/4	36 3/4 @ 35 3/4
Monday.....	43 @ 41 3/4	35 3/4 @ 34 1/4
Tuesday.....	42 @ 42 1/4	35 3/4 @ 35 1/4

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 13 1/2 @ 1 12 3/4	1 12 3/4 @ 1 11 3/4
Friday.....	1 12 3/4 @ 1 11 3/4	1 11 3/4 @ 1 10 3/4
Saturday.....	1 10 3/4 @ 1 09 3/4	1 08 @ 1 08 3/4
Monday.....	1 09 3/4 @ 1 09 3/4	1 08 3/4 @ 1 08
Tuesday.....	1 09 3/4 @ 1 10 1/4	1 07 3/4 @ 1 08 3/4

## WHEAT.

With the heaviest rainstorm of the season extending the past week over most of the State, and doing an immense amount of good, there was naturally an easier feeling in the wheat market, in consequence of the greatly improved crop prospects. The stormy weather interfered with the prompt handling and moving of grain, restricting business and operating against the advantageous disposal of great quantities. Tax time is also close at hand, and this has likewise worked against sellers. Shippers are making every effort to reduce their spot holdings to the lowest point possible by the first Monday in March. If the wheat is on the high seas on tax day it escapes the assessor, and considerable remaining in the interior is placed in transit at the same time for the purpose of avoiding taxation. With wet weather and taxes both against the seller, he has been at a decided disadvantage. Activity will likely soon be resumed, however, and possibly at values more than sufficient to warrant carrying the grain over the tax time. The freight market is weak, ships having difficulty in now securing over 25 shillings per ton on wheat cargoes to Europe, usual option as to destination. With an increased number of ships loading at the reduced freight rates, as is likely to be the case in the near future, wheat should receive more substantial benefit on account of the lower carrying charges than has been yet accorded on the recent break.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	68 3/4 @ 68 1/4	8-10 @ 8-10
Freight rates.....	37 1/4 @ 38 1/4	25 @ 25
Local market.....	96 1/4 @ 98 1/4	1 10 @ 1 11 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.13 1/2 @ 1.09 1/2.  
December, 1902, delivery, \$1.12 1/2 @ 1.07 1/2.  
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.09 3/4 @ 1.10 1/2; May, 1902, \$1.07 3/4 @ 1.08 3/4.

## FLOUR.

Trade has been slow the past week, despite the fact that flour values are on a low basis, compared with prices lately ruling for milling wheat. It is probable that demand on local account will soon show improvement. The outward movement, being mainly of flour previously contracted for, is of fair proportions.

Superfine, lower grades.....	22 @ 22 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

## BARLEY.

The strength developed in the barley market just prior to date of last review

proved of short duration. The liberal rains since experienced caused prices to recede, and at the easier figures buyers were not disposed to take hold freely. Neither were holders as a rule inclined to rush stocks to sale at such figures as it would have been necessary to accept the current week through selling pressure. Barley values are not high, by any means, and even should there be a heavy crop of this cereal the coming season, it is not unreasonable to expect prices to be maintained close to levels lately current, especially for export and brewing grades.

Feed, No. 1 to choice.....	87 1/2 @ 90
Feed, fair to good.....	85 @ 87 1/2
Brewing, No. 1 to choice.....	92 1/4 @ 95
Chevalier, No. 1 to choice.....	1 05 @ 1 15
Chevalier, poor to fair.....	90 @ 1 00

## OATS.

Business has been of a light order, the comparatively stiff prices generally asked by holders causing buyers to operate very slowly. The bulk of supplies is in few hands, however, representing in the main purchases at figures which will not admit, except at a loss, of any great cutting of rates. There are no large quantities now coming forward from any quarter.

White Oats, fancy feed.....	1 40 @ 1 42 1/2
White, good to choice.....	1 32 1/2 @ 1 40
White, poor to fair.....	1 25 @ 1 30
Gray, common to choice.....	1 30 @ 1 40
Milling.....	1 37 1/2 @ 1 42 1/2
Surprise, good to choice.....	1 40 @ 1 45
Black Russian.....	1 15 @ 1 32 1/2
Red.....	1 22 1/2 @ 1 40

## CORN.

Spot supplies continue of light proportions, and market is no more favorable for buyers than for some time past. The firmness of the market is confined more particularly to best qualities of yellow. In past seasons, however, white corn has been most of the time the higher priced variety. No heavy quantities are required to satisfy the demand at existing values.

Large White, good to choice.....	1 35 @ 1 45
Large Yellow.....	1 35 @ 1 45
Small Yellow.....	1 50 @ 1 60

## RYE.

Values are being fairly well maintained at previously quoted range. A cargo of 56,661 centals, valued at \$51,000, was sent afloat from this port on Saturday last for Belgium.

Good to choice.....	85 @ 90
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## BUCKWHEAT.

Little doing in this cereal at present and values in consequence are not very clearly defined.

Good to choice.....	1 55 @ 1 70
---------------------	-------------

## BEANS.

Market has ruled quiet the past week, and in the matter of quotable values no changes of consequence have been effected. Values were perhaps a little better maintained on colored than on white beans, but to have purchased freely of the latter, buyers would have found it necessary to pay full current figures. Receipts of all kinds of beans have been lately of light proportions.

Pea, fair to good, 100 lbs.....	3 50 @ 4 00
Small White, good to choice.....	3 00 @ 3 25
Lady Washington.....	2 75 @ 3 00
Plunks.....	1 90 @ 2 15
Bayos, good to choice.....	2 35 @ 2 50
Reds.....	2 50 @ 3 00
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	4 50 @ 4 60
Black-eye Beans.....	3 50 @ 3 75
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

## DRIED PEAS.

Millers and dealers are well stocked at present with the Green or Blue pea and have fair supplies of the Niles variety. Prices are without quotable change, but the market is not noteworthy for firmness.

Green Peas, California.....	1 50 @ 2 00
Niles Peas.....	1 75 @ 1 80

## WOOL.

The local market is lifeless, owing to absence of offerings, and it will likely be fully a fortnight before new wool will be here in sufficient quantity to admit of quotations for the same. Quotable values on old wool are unchanged, but are wholly nominal. That the coming clip will meet with prompt custom and command comparatively good figures is generally admitted. Already dealers and their agents are out in the country making arrangements to secure desirable clips.

## SPRING.

Southern, defective, 7 mos.....	7 @ 8
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	10 @ 12

## FALL.

Humboldt and Mendocino.....	11 @ 12
Northern Mountain, free.....	9 @ 10
Northern Mountain defective.....	8 @ 9
Middle Counties.....	8 @ 10
San Joaquin and Plains.....	6 1/2 @ 8 1/2
San Joaquin Lambs.....	7 1/2 @ 9

## HOPS.

Dealers are quoting 13 @ 17 1/2 c., but there are no evidences of their having paid or of their showing any inclination to pay anything near the extreme figure quoted. Most of the dealers could accommodate buyers at the range of prices above noted, and then make larger profits than it has been the fortune of the vast majority of growers to realize the past season. Wholesale values in this center are at present too poorly defined to admit of quoting same. Late mail advices from the East give the following resume of the New York market: "The volume of business has not enlarged much, but between the shipments to Europe and deliveries to brewers, stocks are being gradually depleted, and with a stronger holding of the few lots that are back in growers' hands, dealers here are making no effort to move hops except at somewhat higher prices. We have been advised of bids of 16 1/2 c. for choice Pacifics, and it is quite certain that the finest growths of either State or Pacific coast cannot be bought below 17c. Some time sales to brewers have been effected at even higher figures. The firmness extends to the medium and lower qualities also, and we revise quotations to conform to the general views of the trade. Even the yearlings and older hops share somewhat in the improved feeling noted of late. All the country markets are stronger; some lots have changed hands in this State at 14 @ 16c., and 12 @ 13c. has been paid on the Pacific coast."

## HAY AND STRAW.

Wet weather during a great part of the past week has greatly restricted the movement of hay. The tone of the market was weak, as was to have been expected, but no pronounced changes in quotable rates were warranted, nor is it likely that values in the near future will show material depression. Straw was held about as last quoted.

Wheat, good to choice.....	10 00 @ 13 00
Wheat and Oat.....	10 00 @ 13 00
Tame Oat.....	8 50 @ 11 00
Wild Oat.....	8 00 @ 10 50
Barley and Oat.....	8 00 @ 10 00
Alfalfa.....	8 00 @ 10 00
Volunteer.....	6 50 @ 9 00
Compressed.....	10 00 @ 13 50
Straw, 3/4 bale.....	40 @ 60

## MILLSTUFFS.

Nearly all descriptions of mill offal and ground feed have inclined this week in favor of buyers. With the single exception of Milled Corn, quotable values are lower than last noted.

Bran, 3/4 ton.....	16 50 @ 17 50
Middlings.....	19 00 @ 20 00
Shorts, Oregon.....	17 00 @ 18 00
Barley, Rolled.....	19 00 @ 19 50
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

## SEEDS.

Spot supplies of Mustard Seed are now so light as to admit of little other than small jobbing transactions. Alfalfa Seed market is showing more firmness, with decided improvement in the demand since the rains. Bird Seed remains quotably as last noted, with no very extensive trading in the same at present.

Alfalfa, Cal.....	7 50 @ 8 00
Alfalfa, Utah.....	8 50 @ 9 00
Flax.....	2 40 @ 2 60
Mustard, Yellow.....	— @ —
Mustard, Trieste.....	— @ —
Canary.....	3 1/2 @ 3 1/2
Rape.....	1 1/2 @ 2 1/4
Hemp.....	3 1/2 @ 3 1/2

## BAGS AND BAGGING.

The Grain Bag market is not quotably higher, but shows greatly improved tone since the recent rains. Dealers endeavor as a rule, however, to keep prices at a comparatively low range at this time of year, not wishing to encourage heavy importations. Wool sacks are receiving some attention on account of spring clip, and no trouble is being experienced in buying at the rates quoted.

Calcutta Grain Bags, buyer June-July.....	6 @ 6 1/2
Calcutta Grain Bags, spot.....	6 @ —
San Francisco Grain Bags, 22x36, spot.....	— @ —
San Quentin Bags, 3/4 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	3 1/2 @ 3 6
Wool Sacks, 3 1/2 lbs.....	3 2 @ 3 3
Fleece Twine.....	8 1/2 @ —
Gunnies.....	— @ —
Bean Bags.....	5 1/2 @ 5 1/2
Fruit Sacks, cotton, three sizes.....	5 1/2 @ 6 1/2
Fruit Sacks, Jute.....	7 @ 7 1/2

## HIDES, PELTS AND TALLOW.

Many of the Hides now arriving are more or less defective, and on this account the market lacks strength, although quotable values remain as before. Pelts are commanding fairly steady rates, with moderate inquiry. Tallow is in better supply than for some time past, but is not selling at materially lower figures.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not

always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @ —	9 @ —
Medium Steers, 48 to 56 lbs.....	10 @ —	8 @ —
Light Steers, under 48 lbs.....	8 1/2 @ —	7 1/2 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	8 @ —
Light Cow Hides, under 50 lbs.....	8 1/2 @ —	7 1/2 @ —
Stags.....	6 @ 7	— @ —
Wet Salted Kip.....	9 @ —	8 @ —
Wet Salted Veal.....	9 @ —	8 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ —	14 @ —
Dry Kip and Veal, 11 to 16 lbs.....	14 @ —	12 @ —
Dry Calf, under 4 lbs.....	18 @ —	15 @ —
Salted Horse Hides, large.....	2 75 @ —	3 00 @ —
Salted Horse Hides medium.....	2 25 @ —	2 50 @ —
Salted Horse Hides, small.....	1 50 @ —	2 00 @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, small.....	1 25 @ —	— @ —
Dry Cotts' Hides.....	50 @ —	— @ —
Pelts, long wool, 3/4 skin.....	80 @ —	1 20 @ —
Pelts, medium, 3/4 skin.....	65 @ —	75 @ —
Pelts, short wool, 3/4 skin.....	40 @ —	60 @ —
Pelts, shearing, 3/4 skin.....	15 @ —	30 @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good medium.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/2 @ —	— @ —
Tallow, No. 2.....	4 1/2 @ —	— @ —
Goat Skins, perfect.....	30 @ —	37 1/2 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

## HONEY.

There are no heavy quantities offering, neither is the demand brisk. Sales effected are at figures warranting no special changes in quotable values. Recent transactions in this center have been more in Comb than in Extracted, spot offerings being largely of the former description.

Extracted, White Liquid.....	5 1/2 @ 6
Extracted, Light Amber.....	4 1/2 @ 5
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	11 @ 12 1/2
Amber Comb.....	8 @ 10
Dark Comb.....	6 @ 7

## BEESWAX.

Supplies are of light volume. No trouble is experienced in securing custom at prevailing values.

Good to choice, light, 3/4 lb.....	26 @ 28
Dark.....	24 @ 25

## LIVE STOCK AND MEATS.

Although the Lenten period is now on, causing the market to rule quiet, values for choice Beef and first-class Mutton are being well maintained at the quoted range. Veal and Spring Lamb are not arriving freely and are meeting with a tolerably firm market. Arrivals of Hogs were not heavy, but there was enough for the demand at existing rates.

Beef, first quality, dressed, net 3/4 lb.....	7 @ 7 1/2
Beef, second quality.....	7 @ —
Beef, third quality.....	6 @ 6 1/2
Mutton—ewes, 7 @ 7 1/2 c; wethers.....	7 1/2 @ 8
Hogs, hard grain fed, 135 to 200 lbs.....	6 @ 6 1/2
Hogs, small, fat.....	6 @ 6 1/2
Hogs, large, hard, over 200 lbs.....	5 1/2 @ 6 1/2
Hogs, soft or acorn fed.....	5 @ —
Hogs, country dressed.....	6 1/2 @ 7
Veal, small, 3/4 lb.....	8 @ 9 1/2
Veal, large, 3/4 lb.....	8 @ 8 1/2
Lamb, spring, 3/4 lb.....	12 1/2 @ —

## POULTRY.

Market has been very lightly stocked the greater part of the current week with all descriptions of poultry, both home product and Eastern. Good prices were as a rule realized, the only kind inclining to any noteworthy degree against sellers being Old Roosters. The strength of the market was confined more particularly, however, to choice young chickens, Fryers and Broilers in first-class condition being in especially good request. While Turkeys were in light receipt, the demand for this fowl was not active. Pigeons were in fair demand and market for choice Squabs was quite firm.

Turkeys, dressed, choice.....	16 @ 18
Turkeys, alive, Hens, 3/4 lb.....	15 @ 16
Turkeys, alive, Cobs, 3/4 lb.....	13 @ 14
Hens, California, 3/4 dozen.....	4 50 @ 6 00
Roosters, old.....	4 00 @ 4 50
Roosters, young (full-grown).....	6 50 @ 7 50
Fryers.....	5 50 @ 6 00
Broilers, large.....	5 00 @ 5 50
Broilers, small to medium.....	4 00 @ 4 50
Ducks, old, 3/4 dozen.....	5 00 @ 6 00
Ducks, young, 3/4 dozen.....	6 00 @ 7 50
Geese, 3/4 pair.....	1 50 @ 1 75
Goslings, 3/4 pair.....	2 00 @ 2 25
Pigeons, old, 3/4 dozen.....	1 50 @ —
Pigeons, young.....	2 75 @ 3 00

## BUTTER.

With only fresh product offering, and stocks of same not excessive, the market has continued in good shape for the selling interest. No material weakening in values is looked for during the next few weeks.

Creamery, extras, 3/4 lb.....	28 @ 29
Creamery, firsts.....	27 @ 28
Creamery, seconds.....	25 @ 26
Dairy, select.....	27 @ 28
Dairy, firsts.....	24 @ 25
Dairy, seconds.....	22 @ 23
Mixed store.....	16 @ —
Creamery in tubs.....	— @ —
Pickled Roll, 3/4 lb.....	— @ —
Firkin, California, choice to select.....	— @ —
Firkin, common to fair.....	— @ —



CHEESE.

Quotable values and the general tone of the market remain virtually as last noted. There are fair supplies of old and of ordinary grades of new, with market for these descriptions not particularly favorable to sellers. Choice mild new is in limited stock and is saleable to advantage.

California, fancy flat, new.....	11 1/2 @ 12
California, good to choice.....	10 1/2 @ 11 1/2
California, fair to good.....	10 @ 10 1/2
California, "Young Americas".....	10 @ 12 1/2

EGGS.

Demand was not so active as preceding week, shipments to the East being stopped, and the market tended downward. The break in values was not so great, however, as many buyers anticipated. While prices are still considered too high for speculative purchasing, dealers are getting ready to pack, and it is believed values will not touch as low levels as last season.

California, select, large, white and fresh. 19	@ 20
California, select, irregular color & size. 18	@ 19
California, good to choice store.....	17 @ 18
California, common to fair store.....	— @ —
Eastern, good to choice.....	— @ —
Cold Storage.....	— @ —

VEGETABLES.

Stocks and offerings of most kinds of fresh vegetables continued of light volume, and desirable qualities were as a rule favored with a firm market. Peas and Tomatoes were in better supply than preceding week and inclined a little more in favor of buyers. Asparagus was in such light receipt as to be hardly quotable in a regular way. Tendency on Rhubarb was to a wider range of prices, owing to great difference in quality. Onions were in fairly liberal supply, and market lacked firmness, particularly for other than most select.

Asparagus, # lb.....	15 @ 25
Beans, String, # lb.....	10 @ 12 1/2
Beans, Wax, # lb.....	— @ —
Cabbage, choice garden, # 100 lbs.....	50 @ —
Cauliflower, # dozen.....	— @ —
Cucumbers, Bay, # large box.....	— @ —
Egg Plant, Los Angeles, # lb.....	20 @ 25
Garlic, # lb.....	1 1/2 @ 2 1/2
Mushrooms, # lb.....	7 @ 15
Onions, Yellow Danver, # cental.....	1 75 @ 25
Peas, Sweet garden, # lb.....	5 @ 8
Peppers, Green, Los Angeles, # lb.....	15 @ 20
Peppers, Bell, # box.....	— @ —
Rhubarb, # lb.....	10 @ 12 1/2
Squash, Marrowfat, # ton.....	8 00 @ 10 00
Summer Squash, # box.....	1 50 @ 1 75
Tomatoes, Los Angeles, # box.....	1 25 @ 2 00

POTATOES.

Demand for potatoes has shown no marked improvement since last review, and absence of firmness has been a prominent feature of the market, especially for the ordinary run of offerings. Receipts were tolerably heavy. The last two steamers from Portland brought over 21,000 sacks. Shading of rates to buyers rather than miss sales was a frequent occurrence. Sweeters were in fair supply, and market inclined slightly in favor of buyers.

Burbanks, Salinas, # 100 lbs.....	1 40 @ 1 80
River Burbanks in sacks, # cental.....	1 00 @ 1 25
Petaluma and Tomales Burbanks.....	1 25 @ 1 40
Oregon Burbanks.....	1 30 @ 1 60
River Reds.....	1 30 @ 1 40
Sweeters, Merced, # cental.....	1 40 @ 1 50

The Fruit Market.

FRESH FRUITS.

Stocks of Apples are light and include few of choice to select quality. For latter sort the market is fully as firm as at any previous date the current season. Common qualities are not eagerly sought after and have to go in the main at comparatively low figures, although not offering in heavy quantity. Of deciduous fruits other than Apples the market at the moment is bare.

Apples, fancy, # 4-tier box.....	1 75 @ 2 00
Apples, good to choice, # 50-lb. box.....	1 00 @ 1 50
Apples, common to fair, # 50-lb. box.....	50 @ 75

DRIED FRUITS.

In the market for dried and evaporated fruits no especially new features have been developed since last review. The general tone and quotable values remain practically as last noted. The market as a whole shows excellent condition, and is in the main firm at current rates, with good prospect of there being a clean-up before the close of the season of everything except, possibly, Prunes. While the Prune market is quiet at present, it is altogether probable that there will be a better movement later on. Stocks of Prunes are mainly of the 1900 crop, and for these the market cannot be termed firm, although still quoted on the 2 1/2 @ 3c basis for the four sizes. New Prunes are fairly steady on the 3 1/2 @ 3 1/2c basis for the four sizes, and being in light stock are not likely to rule lower. If Prunes are carried over they are more apt to be old than new, although the selling pressure is mainly on the old, and in some instances

it is claimed the latter are made to do service as new, but not at card rates for 1901 fruit. Remaining stocks of Peaches, perhaps eighty or ninety carloads, are mainly concentrated in the hands of three or four dealers and are being firmly held. Some Peaches are finding custom on Eastern account at full current rates. Apples are ruling decidedly steady, under quite limited supplies. Apricots are holding their own well, buyers finding it necessary to pay full current figures and then are unable to secure heavy quantities. Pears are scarce, probably not over four or five cars in entire State, and for desirable stock the market is strong at the values ruling. Pitted Plums are in moderate supply and, although not actively sought after at present, are being steadily held.

EVAPORATED OR BLEACHED.

Apricots, Royal, choice, in sacks, # lb.....	9 @ 9 1/2
Apricots, Moorpark.....	10 @ 12
Apples, in 50-lb boxes, rings, pressed, fancy.....	8 1/2 @ 8 1/2
Apples, 50-lb boxes, rings, pressed, good to choice.....	7 @ 8
Nectarines, # lb.....	5 @ 6
Peaches, unpeeled, fancy.....	8 @ 9
Peaches, unpeeled, choice.....	6 1/2 @ 7 1/2
Peaches, peeled, in boxes.....	12 @ 14
Pears, halves, choice to fancy.....	6 1/2 @ 8 1/2
Plums, Red and Black, pitted.....	5 1/2 @ 6 1/2
Plums, White and Yellow.....	5 1/2 @ 6 1/2
Prunes, 4 sizes, in bags, 3 1/2 @ 3 1/2c; 50-60s, 4 1/2 @ 4 1/2c; 60-70s, 4 @ 4 1/2c; 70-80s, 3 1/2 @ 3 1/2c; 80-90s, 3 @ 3 1/2c; 90-100s, 3c @ —; these figures for 1901 crop.	

COMMON SUN-DRIED.

Apples, sliced.....	3 @ 5
Apples, quartered.....	3 1/2 @ 4 1/2
Peaches, unpeeled.....	5 @ 6 1/2
Pears, prime halves.....	5 @ 5 1/2
Plums, unpitted, # lb.....	1 1/2 @ 2 1/2

RAISINS.

There is no active movement in Raisins, which is invariably the case at this time of year, but all things considered, there is as much doing as could be reasonably expected. Stocks and offerings are light, and there is every prospect that all supplies will be absorbed within the current season. Values are being maintained at previously quoted range.

Following are the prices for 1901 crop in carload lots:	
Loose Muscatels— Per lb.	
4-crown.....	6 1/2
3-crown.....	6
2-crown.....	5 1/2
Seedless Muscatels.....	5 1/2
Seedless Sultanas.....	5 1/2
Thompson's Seedless.....	6 1/2
Seeded—	
3-crown, 1-lb. carton.....	7 1/2 @ 8
2-crown, 1-lb carton.....	6 1/2 @ 6 1/2
London Layers, 20-lb. boxes—	
2-crown.....	—
3-crown.....	—

CITRUS FRUITS.

The Orange market is moderately firm for choice to select qualities, more especially of Navels, such being in slim supply and selling more readily at the higher quotations than do common qualities at the lower figures named for the latter. Inquiry for Lemons is fair, but is principally for choice to select, and only for best qualities does the market display any firmness. Quotations are unaltered. Asking figures for Limes were marked up \$1.00@1.50 per 1000.

Oranges—Navels, # box.....	1 00 @ 2 75
Mediterranean Sweeters, per box.....	1 00 @ 1 50
St. Michael.....	1 00 @ 2 00
Malta Blood.....	2 00 @ 2 50
Tangerine, as to size of box.....	1 00 @ 2 00
Seedlings, # box.....	75 @ 1 25
Lemons—California, select, # box.....	2 25 @ 2 50
California, good to choice.....	1 50 @ 2 00
California, common to fair.....	75 @ 1 25
Grape Fruit, # box.....	1 25 @ 2 50
Limes—Mexican, # box.....	5 50 @ 6 00

NUTS.

Not many Almonds or Walnuts now offering, nor are many required to satisfy the present demand. Business is mostly of a light jobbing character and at generally unchanged values. Supplies of Peanuts are only moderate and previous prices are being fairly well maintained.

California Almonds, shelled.....	15 @ 18
California Almonds, paper shell, # lb.....	10 @ 13
California Almonds, soft shell.....	8 @ 10
California Almonds, hard shell.....	5 @ 6
Cal. White Walnuts, No. 1 soft shell.....	9 @ 10
Cal. White Walnuts, No. 2 soft shell.....	7 @ 8
Cal. White Walnuts, No. 1 hard shell.....	8 @ 9
Cal. White Walnuts, No. 2 hard shell.....	6 @ 7
Peanuts, California, fair to prime.....	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.....	5 1/2 @ 6
Pine Nuts.....	5 @ 6

WINE.

The wine market remains in all essential respects the same as previously noted. In a wholesale way there is very little doing, as is to be expected at the close of February. Dry wines of 1901 vintage continue quotable wholesale at 22@26c per gallon, with scarcely any offering under 24c. To sell freely at this date, however, it would be difficult to realize over 24c for choice, and ordinary grades might have to go for the time being at less than 22c if urged to sale. Prospects are that later in the season market will be more favorable to the producing and selling interest than at present.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	130,443	4,650,682
Wheat, centals.....	296,431	6,794,278
Barley, centals.....	65,809	5,010,768
Oats, centals.....	4,619	711,481
Corn, centals.....	807	76,468
Rye, centals.....	990	139,500
Beans, sacks.....	5,255	582,444
Potatoes, sacks.....	18,621	1,011,892
Onions, sacks.....	3,686	162,113
Hay, tons.....	2,057	102,881
Wool, bales.....	12	43,603
Hops, bales.....	325	7,740

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	88,932	3,388,830
Wheat, centals.....	259,102	6,286,083
Barley, centals.....	50	3,737,466
Oats, centals.....	50	2,203
Corn, centals.....	—	8,908
Beans, sacks.....	15	19,801
Hay, tons.....	163	11,844
Wool, pounds.....	1,790	545,331
Hops, pounds.....	25	470,417
Honey, cases.....	—	5,680
Potatoes, pack's.....	758	42,308

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Of late in the office of Deere & Co., says the Farm Implement News, there has been exhibited a rare old plow of clumsy form and rude construction, but it is shown as proudly and guarded as carefully as decorations of honor and merit which have been awarded the later development of the same plow. This is a plow made by John Deere, founder of the company, while he was a blacksmith in Grand Detour in 1838. Hammered out at the forge of the country blacksmith shop by the pioneer of all in the manufacture of steel plows, it now comes to grace the entrance hall of the biggest factory devoted to their manufacture in the world, where 1200 men toil to turn out 200,000 of its modern type every year. The plow was found on a farm just east of Grand Detour not long ago by Sam Gantz, the company's traveling man in northern Illinois. He was on the farm on some company business when he was shown the relic, which had been resurrected from a pile of rubbish and abandoned tools near the barn. The owner of the farm told its history, saying that his father, John Brierton, had purchased it from John Deere in 1838 after he had completed it at the forge. As it stands now, appearances indicate that the plowshare was welded on to the moldboard, though it may have been tinkered at hundreds of times by rural artisans since it was made. The oaken frame is of the stoutest wood and so well preserved is it that it might well take a turn in the field yet, as it has done in its life through hundreds of acres. That was one of the first steel plows. To-day the plant which has grown from it gives these statistics on the back of passes issued to visitors: "Use 50 tons of emery, 300 tons of oil and varnish, 2500 tons of grindstones, 12,000 tons of iron and steel, 10,000 tons of coal and coke, 2,500,000 feet of hardwood lumber, 5000 gallons of fuel oil, 100 tons of advertising matter, and other material in proportion."

The arrival of the old plow has inspired an old resident and former blacksmith, L. F. Kerns, to tell the story of the first plow as Mr. Deere told it to him. Mr. Deere said: "Some time after I moved to Grand Detour I conceived the idea of making a plow out of plate steel. I bought an old-fashioned mill saw and cut off the teeth with a hand chisel. Then I cut out patterns from paper of the moldboard and share, laid them on the saw, marked out the shape, and with the help of a striker and sledge cut them out with a hand chisel. Then I placed the steel pieces on the fire of the forge and heat-

ing what little I could at a time I shaped them the best I knew how with the hand hammer. After making the upright standard out of bar iron, I was ready for the wood parts, and going into the timber dug up a sapling and made the crooks of the roots do for handles, shaped the beam out of a stick of timber with an ax and a draw knife and finally constructed a very rough plow. I set it on a dry goods box beside the shop door and a few days afterward a farmer from across the river drove by and asked who made the plow. 'I did,' I replied, 'such as it is, wood parts and all.'

"Well, that looks as though it would work," he replied. 'Let me take it home and try it, and if it works all right I will keep it and pay you for it. If not, I will return it.'

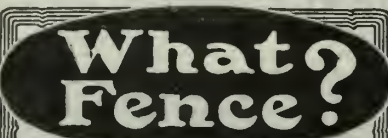
"Take it, said I, 'and give it a thorough trial.'

"About two weeks later the farmer came back and paid for the plow and said: 'Now, hurry up and make me two more plows just like the other one.' And I did hurry and made the plows, which the farmer took and paid for just as soon as they were done. I was greatly encouraged and then and there resolved that I would make plows."

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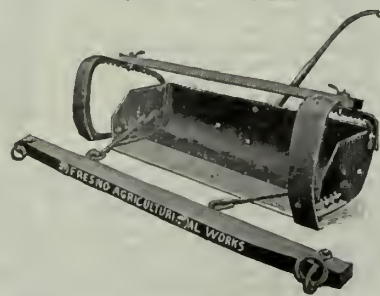
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### How Our Northern Neighbors Handle Carloads of Perishable Goods.

TO THE EDITOR:—Transportation is still the problem on the right solution of which depends the producer's welfare. Not only the cost in cash, but the cost in time to the fruit grower has been of utmost importance. It has been often and often averred that no time schedule can be given on east-bound freight. I enclose the following to show what a Northern company, the Canadian Pacific, can do to foster a local industry that has far less than a tithe of the importance of the fruit industry:

VANCOUVER (B. C.), Feb. 20.—The Halibut Express, comprising nine cars of fresh halibut, one car of Puget sound salmon and one car of Squamish valley hops, left here yesterday for Boston. This is the first through train to run from the Pacific to the Atlantic. It will make the same time as the passenger express, and the fish will be landed in Boston Monday morning.

It will be noted that the cars left Vancouver, B. C., on Thursday, Feb. 20th, and are billed to arrive in Boston on Monday. Four days only; and that over a road subject to all the inclemencies of the most northerly route.

What the Canadian Pacific can do why cannot the Southern Pacific?

EDWARD BERWICK.

Pacific Grove, Feb. 20.

If we read aright the train left on the 19th, which would make five days instead of four—but that is fast enough.

—Ed.

### New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

- FOR THE WEEK ENDING FEBRUARY 11, 1902.
- 693,223.—HORSE CLIPPER—M. Bohnert, S. F.  
693,225.—OIL BURNER—G. A. Bonelli, Kingman, Ariz.  
693,003.—FIRE ALARM—F. G. Gaschlin, S. F.  
693,270.—WAVE MOTOR—R. H. Hannan, San Pedro, Cal.  
693,018.—WIRE MATTRESS STRETCHER—J. Hoey, S. F.  
693,024.—HOSE COUPLING CLAMP—O. Iverson, East Berkeley, Cal.  
693,025.—SEPARATOR—R. W. Jessup, S. F.  
693,026.—SEPARATOR—R. W. Jessup, S. F.  
693,296.—CURTAIN FIXTURE—W. E. Matthews, Ferndale, Cal.  
693,146.—PRESERVING SHARP EDGES—O. Newhouse, S. F.  
693,060.—HAMMER—Patendale, Korbel & Anderson, Eureka, Cal.  
693,323.—CHAIR—R. Rodgers, Volcano, Cal.  
693,163.—HOP DRIER—J. W. Seavey, Eugene, Or.  
693,075.—SQUARE AND BEVEL—A. C. Smith, Los Angeles, Cal.  
693,076.—ROASTING FURNACE—Spike & Jones, Tacoma, Wash.  
693,081.—THILL TUG—H. G. Taylor, Seattle, Wash.  
692,941.—FELLY BRACE—J. N. Thorne, Williams, Cal.  
693,194.—SNAP HOOK—Weber & Frey, Baker City, Or.  
693,358.—VAGINAL IRRIGATOR—H. W. Westlake, Los Angeles, Cal.

YEAST—Did your barber ever tell you any hair-raising stories? Crimson-beak—Yes; he told me that the tonic he sold me would make my hair grow.

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## THE VETERINARIAN.

Answers by Dr. C. W. Fisher.

TO THE EDITOR:—Will you kindly inform me of a remedy for a horse that is in the habit of going to sleep and falling down when a temporary stop has been made while driving him? The horse in question is one of my driving horses—very light work, driven perhaps twice a week, only a distance of 20 miles each trip. Horse will weigh about 1050 or 1100 pounds. He is turned out in the pasture while not being used, is stabled at night and fed good oat hay. He will go to sleep in the stable and fall down in a lump. While driving him and making a temporary stop he will sometimes go to sleep and fall down in the shafts, especially if it is warm sunshine. Is the trouble from his liver or heart?—L. THOMAS, Lotus, El Dorado county.

Your horse probably has some cerebral brain trouble. If he has no heavy feed and plenty of exercise when not driven, probably there is no serious liver trouble. Heart disorder would be more apt to manifest itself during the drive. Tumors sometimes develop in the brain, causing such symptoms, especially in gray horses. These tumors interfere with the circulation of the blood. If he is more subject to these

attacks after a drive, or with a high checkrein, this is probably the cause. It is of little use to recommend treatment. If it is of long standing, probably the horse will not recover. If recent, try to show him to some good veterinarian.  
C. W. FISHER, V. S., D. V. M.  
San Mateo.

EXCEPTING chickens, more people own swine than any other farm animal. The hog has come to be one of the great factors in the financial world, as the prices of hog products affect a long line of other commodities. On the farm Mr. Pig is either kept to furnish the family meat supply or is bred in large numbers for market. The readiness in which money can be realized from this source has greatly stimulated the swine industry. Every swine grower needs a practical, up-to-date swine paper, such as Blooded Stock, Oxford, Pa. Write for trial subscription or sample copy.

### Bolton's Frost Alarm.

J. P. Bolton's frost alarm has proven a success for one fruit grower in the Kings river country managing a large lemon and orange grove. He says it has saved him as much as \$3000 in one night. N. W. Moody and a neighbor set one of the alarms and on Tuesday at midnight each was aroused by the continuous ringing of the frost bell. Mr. Moody says in a letter to-day:

"I have been up since 12:30 this (Tuesday) morning. The bell rang at that time, and I got four Japs out and began to smudge with straw. I am smudging with the straw because of the fact that Mr. Freude has not as yet sent my oil pots."

Mr. Moody was warned in ample time, and acting at once saved the lemon crop from a severe frost, fighting which at the least calculation saved him \$3000.—Fresno Democrat.



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runs on day and night; no need of standing over it for a minute. It will do the work and hatch the chicks. Its merits have been tested and its worth is known. Known as the most perfect as regards regulation of heat, moisture and air; as the one that is always safe and sure. The one you can depend upon. It is a hot air incubator. Our free catalogue tells all about our new egg tray, and many other late improvements. Address nearest office. Petaluma Incubator Co., Box 217, Petaluma, California, or Box 217, Indianapolis, Indiana.

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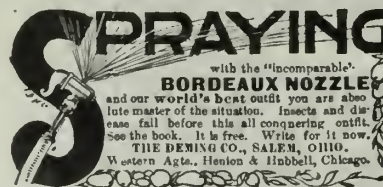
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Per Day, Warranted. Durability unequalled.

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Your Dealer Sells Them.

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and our world's best outfit you are absolute master of the situation. Insects and diseases fall before this all conquering outfit. See this book. It is free. Write for it now. THE PENING CO., SALEM, OHIO. Western Agents, Henson & Hibbell, Chicago.



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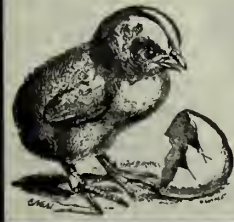
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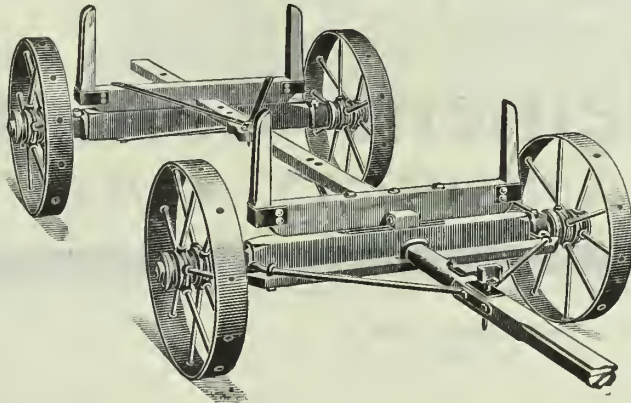
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**INFERNA 2:24 1/2** Register No. 30838. By Clipper 2:06, Sir Albert S. 2:08 1/4, Diodine 2:10 1/4 and 15 more in 2:30. Dam Biscari by Director, 2:17. second dam Biscari (dam of 6 in 2:30 and 4 producing sons) by Harold.

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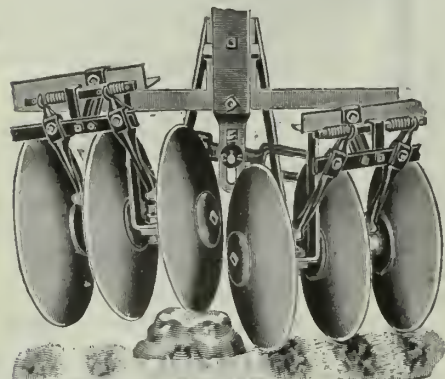
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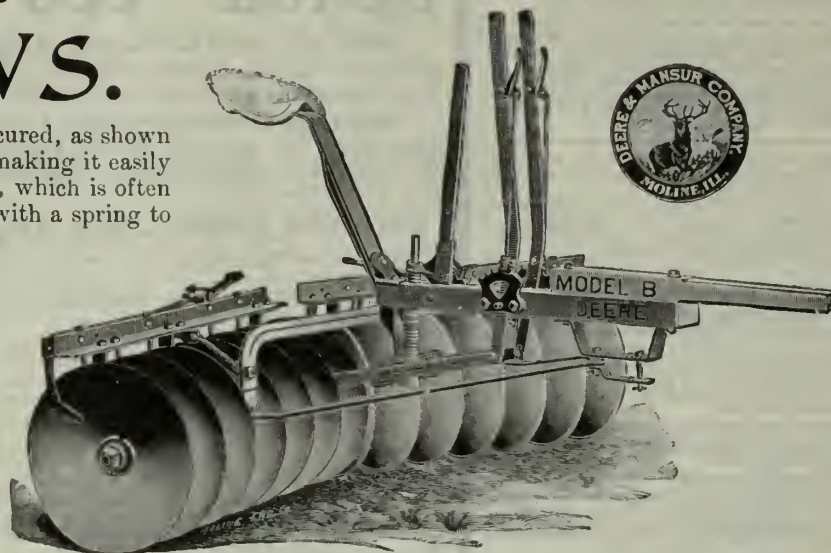


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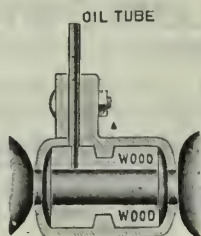
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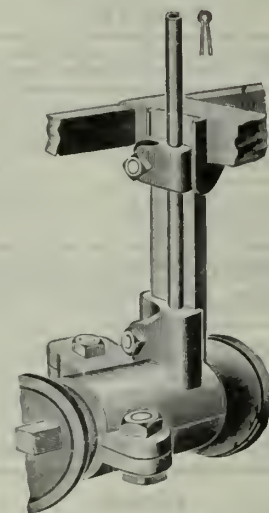
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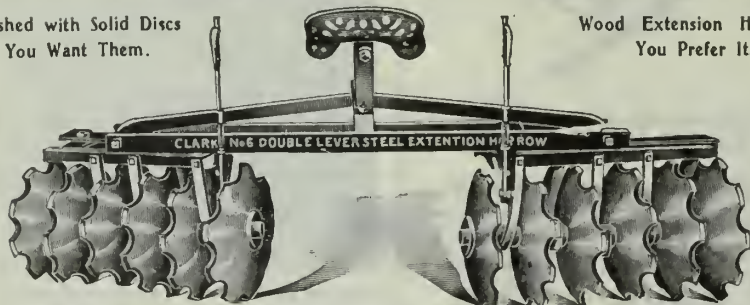
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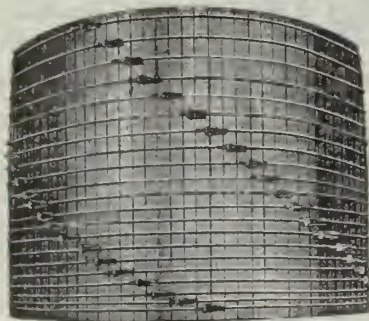
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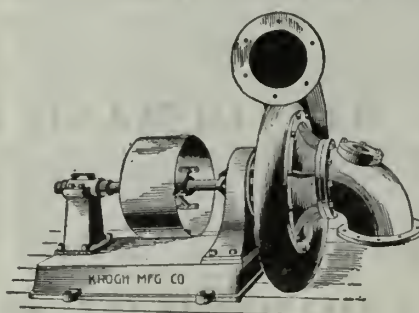
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# THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 10.

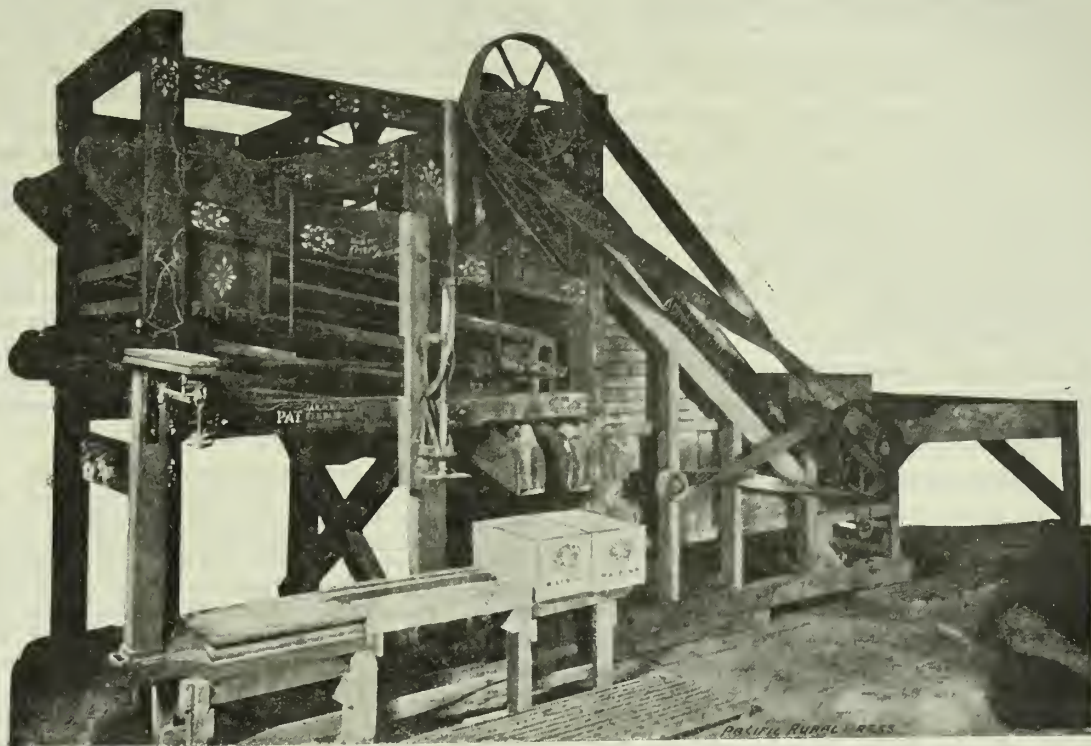
SAN FRANCISCO, SATURDAY, MARCH 8, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

## A Small Lemon House.

One of the pictures on this page shows a well equipped and provided farm home in the King River district of Fresno. The comfortable house is well shaded, the outbuildings are trim and shapely and yet inexpensive, and the woodshed is full to the muzzle. Half a glance should convince anyone who knows how to judge that it is the home of a man who loves his farm and believes in having his family comfortably situated and supplied. There is a whole sermon in the background of this picture, but we forbear.

We desire, rather, to call attention to the plain building on the right, where Romeo is in the tall corn waiting for the balcony act with Juliet at the window. This building is a lemon house, such as anyone can build for himself if the full report of results, which we hope to have next August, proves it to be as successful in storing lemons as now seems to be promised. Mr. Thomas Yost has a lemon orchard coming into free bearing. At first he stored the lemons in a small adobe house which he built for ordinary cold storage of house supplies, and the lemons spoiled before the hot weather began. He decided then to build a house to meet the requirements of even temperature, darkness, quick discharge of surplus moisture, free ventilation, etc., which he learned from the PACIFIC RURAL PRESS were involved in lemon keeping. The picture shows the result. The building is of wood throughout, except the floor, which is of cement. The size is 24x36 feet outside. The side walls are 9 feet, and they are made of boards with edges jointed to fit tightly. Twelve inches within there is a second board wall, and the space between the two is filled with sawdust well tramped. These two walls rest on a 2x14-inch redwood mudsill. The ceiling is supported by a truss, which gives a room 21 feet 10 inches by 33 feet 10 inches, free from joists. Over the ceiling 18 inches depth of sawdust is spread. The roof projects 44 inches on all sides; the gable ends above the square extend 36 inches. This arrangement allows the air to circulate freely and ventilate the attic. Two ventilators, 6x8 inches inside, shown in the picture, extend downward through the ceiling into the main room. There are also in this room five windows 24x32 inches and one door 4x7 feet. All these openings are fitted with double shutters 3



Raisin Stemmer, Cleaner and Grader Just Shipped From Fresno Agricultural Works to Denia, Spain.—(See Page 167.)

inches thick, which close airtight. It is not expected that all these openings would be used together, but it is safe to have them in case they should all be needed.

The door of the house was first closed October 20, and the temperature was easily held down to that prevailing at night time. After being in the house three months, our informant saw the lemons and found them dry and sound and likely to go through all right, as they seemed to be in perfect condition. On cold nights the house is not opened, but the door is opened a while in the day time to admit fresh air. When the house is closed it is as dark as midnight, as the ventilators show no light.

Mr. Yost packs and stores his lemons in common sweat boxes 24x36 inches, 8 inches high. He puts in, first, a layer of paper, then alternates lemons and paper, three layers in each box, with paper on top.

The boxes are stacked eight tiers high, with a  $\frac{1}{4}$ -inch slat between the boxes. On top of the pile, in addition to the paper, a piece of burlap is used.

As we have stated, this house is now on the way with a cargo of lemons. When everything gets to port next August, we shall expect Mr. Yost to furnish our readers with a full manifest.

THE longest electric power transmission line is in California at the present time, in fact several of the longer power transmission lines are there. The Bay Counties Electric Power Co. delivering over its own transmission line, and that of another company which has not started its dynamos yet, is commercially using power 214 miles from the generating station. Distance does not seem to have added any technical difficulties to the common practice with shorter lines. It is already so ordinary an affair that only

Eastern people continue to be impressed by the engineering of it. It is quite probable that if the engineers who devised and constructed the transmission were asked to make another commercial transmission of power to twice the distance, say 400 miles, they would proceed to do it quite as a matter of course. The telegraphed information that Niagara power has been successfully transmitted and used 40 miles away, or that the Missouri river has been harnessed to wires and sent 65 miles to Butte, Mont., causes no astonishment here. Comparatively the achievements are less notable than those in California which long since ceased to be notable.

AN ordinary speed to run pumps is 100 feet of piston motion per minute.



Farm Buildings and Lemon House of Mr. Thomas Yost, King River, Fresno County.



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Published Every Saturday at 330 Market Street, San Francisco, Cal.

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Entered at S. F. Postoffice as second-class mail matter.

DEWEY PUBLISHING CO. Publishers

E. J. WICKSON. Horticultural Editor

San Francisco, March 8, 1902.

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## The Week.

Agricultural affairs are still moving on broad lines. Almost every day rain has fallen somewhere in the State, and new storms seem to be rising in the wake of the old. Rivers are rising over the plains and snows falling deeply over the mountains. It looks as though the weather for the rest of the season would take care of itself, and the best men can do is to make the most possible out of the favorable conditions. Spring rains make the crops, and spring rains are here almost in winter measurements.

There is continued activity and interest in efforts to make California better known. Since our reference to this matter last week there have been many meetings and conferences. The great interior valley is joining hands with the coast valleys under the leadership of Santa Clara, and it looks as though the whole upper half of the State might be enlisted in a systematic development hunt which must discover something. The spirit and activity of the whole movement is promising and commendable.

Though it has been a stormy week, nearly three-quarters of a million dollars' worth of breadstuffs has gone out to foreign ports. The assessor is a greater fright than the storm and everything that was loose last week was pushed out to escape taxes. Ten full cargoes of wheat and one of rye to Europe, a cargo of barley to Australia and a large lot of flour for Asia are among the exports. Milling wheat is firm and slightly higher. Barley is doing better, oats and corn are unchanged, while rye is advanced because of reduction of stocks by export. Millfeeds are lower and slow and weak in action. Hay is unchanged, though an easier feeling is reported. Beef is firm; mutton a little higher for wethers; lamb is scarce; hogs are steady, but apprehension of receipt of milk hogs soon has some effect. Butter continues in light stock and steady. Cheese is steady, but eggs have dropped to low levels and are thought to be near bedrock for storage is proceeding. Poultry is still high, but shows sign of weakening. Potatoes have a wide range. There is a fair demand for choice and few offerings. Oregonians are still arriving. Onions are weak, but unchanged. Mexican tomatoes and peppers have arrived freely and prices are reduced. Asparagus supplies are increasing, but box sales have not yet begun. Fresh fruits are about the same as last week and dried fruit in good shape on a jobbing basis. Better inquiry from the East is reported, as it is thought supplies at the East are running low. Honey is perhaps a little easier on the basis of improved outlook. It is reported that early clipping is begun again and wool buyers are out looking for the stuff. The promise is of an active trade.

What chance has the poor taxpaying farmer when the county assessors meet in convention to study out ways and means to cinch him! It is usually bad enough for the farmer when he has only the sharp eyes and cruel heart of his own county assessor to suffer from. Now, however, things are vastly worse; the assessors are arranging to do team work and the farmer will be flattened. They had a convention in Fresno last week and the San Joaquin valley counties were represented. The Fresno Republican tells how the assessors have to do something to guard against the method of avoiding the payment of taxes adopted by certain citizens who live on the border line of counties, and who watch for the coming of the deputy assessor. When the assessor of one county appears they drive the stock across the borders into the other county, and when the assessor of the other county looms up on the horizon, they drive the cattle back into the county whence it came. Of course while the different counties have widely different taxation rates there will always be men who will try to do business in this way, but the assessors have exchanged names of people who are suspected of working this game. The assessors will look after them, and when the time comes for deputies to approach the suspected ranches, there will be men from both counties within hailing distance of each other. It is then expected that the assessors will proceed to assess according to the new schedule of animal values which they have agreed upon:

Horses—Range horses and ponies, \$10 to \$15; ordinary work horses, \$25 and up; thoroughbred and driving horses, \$75 and up; mules, \$35 and up.

Cattle—Ordinary milch cows, \$25 and up; thoroughbred milch cows, \$50 and up; beef cattle, \$25 and up; stock cattle, \$15 and up; calves, \$5 to \$10.

Sheep—Stock sheep, ewes and common sheep, \$2; mutton sheep and wethers, \$2; buck sheep, \$5; lambs, 50 cents.

Hogs—All kinds, 3 cents a pound.

In the matter of grain a method of uniform assessment was arranged to be operated for the first time this year. It was decided to leave the valuation to be fixed by Assessor Jones of Contra Costa. He settled the value of grain on the first Monday in March, telegraphed the figures to the assessors of different counties, and that figure was used in establishing the valuation of grain all over the valley. This step seems to be a great advance in the matter of uniformity, and therefore very important.

The high water in the Sacramento river and its tributaries again enforces the imperative need of some adequate and systematic relief for the flood waters of that region. It is a subject over which engineers have pondered and contended for years, but which does not seem difficult to accomplish, providing the costs could be met and vested rights adjusted. An illustration of the present conflict of rights is found this week in a case where one suffering party proposed to let out the water from his submerged land to submerge the land of another party, but he has been enjoined by the courts at the instance of the menaced party. The owners of Androus island desired to cut the levee on the west side in order to permit the waters, which had inundated the island at the breaking of the levee on the east side, to flow into Georgiana slough and the Mokelumne river. It was shown to the court that if the levee is cut the water from the Sacramento river will flow into Georgiana slough and the Mokelumne, causing these streams to overflow their banks and submerge Tyler and Bouldin islands. The islands threatened with inundation were reclaimed by constructing substantial levees, many yards in thickness. The lands thus fortified against the water have proved exceedingly fertile and produce asparagus that has become famous. Should the levee be cut and the island become inundated more than \$200,000 worth of property would be destroyed. On last Saturday Ryer island was submerged and its entire crop of asparagus and all the buildings and fixtures on the island completely destroyed. The judge has issued the injunction against cutting the levee and called a hearing for March 15. Perhaps by that time the water will run away in some other direction. All this sort of difficulty can only be prevented by systematic improvement of the flood channels of the river.

We are asked to call attention to the prevalence of the disease known as asparagus rust in the East-

ern States and to warn planters against importing seed or roots from the East for fear of introducing the malady. The proposition is a good one for the commercial plantations in this State seem to be free from it. The late Dr. Harkness made record of the existence of the disease in California some years, but he may have made a mistake. It is a fact that, though we have made diligent inquiry and examination for the last two or three years, we have never seen or heard of a case. Let it be kept out of the State! It is now seriously menacing asparagus industries at the East, and we cannot afford to take any chance whatever of its introduction here. In the proper season for its discovery, which is in the aftergrowth after cutting has ceased, we shall make inquiry again to see if any reader can find signs of its presence.

And the blessed bees will be snatched from the blossoms after all. The Bee Keepers' Committee and the Pear Growers' Committee met in Hanford last week and agreed upon a joint manifesto calling upon all bee keepers to remove the bees at least 3 miles from a section of country described as follows: Beginning  $\frac{1}{2}$  half mile west of Armona, Cal., at the center of section 32; thence north 2 miles to center of section 20; thence east 2 miles to center of section 22; thence south 2 miles to center of section 34; thence west to starting point—all in township 18, range 21 east, Mt. Diablo base line and meridian. From the district enclosed by the above lines the bees are to be moved 3 miles and kept at such distance during the pear blooming season, from March 1 to April 15, 1902, these dates being determined by the committee of bee men working jointly with a like committee of pear growers. We trust this advice will be followed by all who are keeping bees in order that the relation of the bees to the spread of pear blight or the prevalence of wild bees may be passed on toward demonstration if possible. We shall have a full exposition of this subject in next week's issue.

A California man is presiding over the great cattlemen's convention which is being held in Denver as we go to press, and a California orator is spell-binding the convention with a plea for range improvement and forest conservation. It is the American Cattle Growers' Association, embracing all cattlemen's associations west of the Missouri river. F. C. Lusk of Chico, Cal., is president of the association. Several hundred delegates were present. President Lusk's annual address was devoted largely to the question of leasing the public domain. He advocated the enactment by Congress of a law to regulate the matter. "Untold harm is being done to cattlemen," he said, "by the free use of the public lands for grazing purposes." Col. John P. Irish of California also made an address in favor of the enactment of a law to authorize leasing of public lands. It is necessary, he said, that the 6,000,000,000 acres of forest land be preserved to help hold the snows of winter and furnish the necessary water for the Western pioneers' homes and other uses. There are 400,000,000 acres of land not fit for any other use than the great one of developing and growing and fattening of cattle, sheep and horses, and which, according to a recently published statement, by overcrowding, was being depleted at the rate of 5,000,000 acres a year; and, further than this, the great scramble for this grazing country was resulting in the loss of 500 lives a year by encounters. The revenue to be derived by the leasing of the public domain, 400,000,000 acres at 2 cents an acre, will give a total of \$8,000,000 to be used for the construction of irrigation enterprises, and what will follow? The most profitable result will be the realizing of winter feed for stock, as no one will intelligently advocate the idea of an increase of grain acreage. The West ought to follow out a system of symmetrical development if it is hoped to build up this millions of neglected country, to induce immigration.

The Fresno raisin people are proceeding toward reorganization. At a meeting held at the close of last week the propositions of the committee of fifteen were generally agreed to. These bring the Association more nearly to the popular ground upon which the disaffected may rejoin the orthodox. The details will appear later.



QUERIES AND REPLIES.

Black Knot of the Vine.

TO THE EDITOR:—I send to you a Zinfandel grape vine, one year from the slip, on the trunk of which, at the highest joint that was beneath the surface of the ground, are two hard, black, roundish knots or lumps. What are these lumps and their cause, and is it advisable to plant such a vine in a vineyard?—SUBSCRIBER, Malaga.

This is the abnormal growth commonly called black knot of the vine. It is thought to be identical with crown knot or root knot of fruit trees, but we are not sure that they have been demonstrated. The best available treatment, in the case of a small rooted vine like the sample, would be to remove the knots cleanly with a sharp knife, removing also a little of the healthy wood beneath and touch the wound with Bordeaux mixture. This renders it probable that the knot will not reappear at that place. After a year in the vineyard all vines should be examined just below the ground to see if there are such knots to be removed and treated. We should not want to buy rooted vines with such knots on; the nurseryman should cull them out in filling orders. If we had the vines on hand, however, we would treat them as described above and expect to keep the trouble in check.

Hurry-up Corn.

TO THE EDITOR:—What variety of corn is the best for drought resisting and early ripening, and also will give the best crop? I want a field corn for feeding hogs. Where in California can I get sufficient seed of the variety you recommend to plant about ten acres of land?—MCCOY FITZGERALD, Redding.

We had an inquiry of this kind a few months ago, and in answer thereto mentioned the following: Two early yellow corns most suitable for trial are "Yellow Leaming," a large, long ear and strong plant, ripening sometimes in a favorable locality in 100 days; also "King of the Earliest," even a quicker kind, with a large ear, small cob, etc. No one responded to our invitation to name better kinds, so these must stand until challenged. The best corn is, however, often a local question, and both information and a seed supply can be secured by local inquiry among corn growers of the district. Seed corn can be had from San Francisco seedsmen, and it is often better to start with the selected seed which they offer than to take local supplies, unless they, too, have been selected by a careful grower.

Fruit Growing on Isle of Pines.

TO THE EDITOR:—It has been suggested that you could render an opinion on the advisability of entering upon fruit raising on the Isle of Pines. Any information you may see fit to impart on this subject will be greatly appreciated.—READER, New York City.

Lack of knowledge concerning the natural conditions prevailing on the Isle of Pines (which lies in the tropical seas south of Cuba) makes it altogether unsafe for us to give an opinion as to the suitability of this island for fruit culture. No one should think of forming an opinion in this line without understanding well conditions of soil, temperature, rainfall, elevation and exposure, velocity of the wind, prevalence of injurious insects or plant diseases, because unsuitability in any of these directions might wreck an enterprise in which considerable investment might have been made. As to conditions which prevail in California, and on the basis of which our fruit growing has attained such vast proportions, descriptions are given in our book on "California Fruits," and by comparing our conditions with those on the Isle of Pines you can get whatever hints California experience can afford you.

Feeding Alfalfa and Ground Grain.

TO THE EDITOR:—Please state the best way to feed alfalfa, with corn or ground barley, to steers when preparing for market. Is it more beneficial to cut, wet and mix with grain when ground?—FEEDER, Campbell.

The result of recent experiments seems to favor feeding hay without cutting and ground grain or millstuffs dry. In one set of experiments the ground grain sprinkled upon hay which had been wetted down beforehand seemed to give quicker results in fattening, but on the whole no better than hay fed long and grain fed dry. Certainly it is better to

feed grain dry when fresh alfalfa or other succulent material forms part of the ration, and the extra cost of cutting and wetting hay and making a mixture with ground feed does not prove to be profitable, although there seems to be every preconceived reason why it should be.

Chemical Fertilizers for Lawn.

TO THE EDITOR:—Would the following be a suitable application for grass lawn? Thomas phosphate, 20 pounds per 1000 square feet; potash, 10 pounds per 1000 square feet, nitrate of soda, 5 to 7½ pounds per 1000 square feet. I figure that those amounts are equal to about 800, 400 and 200 to 300 pounds per acre, respectively. Would the lime in the Thomas phosphate have any injurious effect on the grass, and is this the proper time of year to apply? I presume for clover lawn the nitrate should be omitted. Should the other articles be proportionately increased?—CARMELITA, San Francisco.

We have had no observation on the use of Thomas phosphate for lawns; but, from what we know of its slow solubility, we should consider it a good material to dig or plow in in preparation for a lawn, but not very satisfactory for use on growing grass. A superphosphate would be more available. There would be no danger from the lime in the amount you propose to apply, and we would like to know what conclusions you reach on trial. For clover you can omit the nitrate, if the clover has made a good stand, and increase the potash, which is a special stimulant for clover.

Mangels and Dried Pears for Hogs.

TO THE EDITOR:—How can I best feed the Long Red Mangel beet to hogs to secure the greatest size and fat in a short time? Also how shall I feed dried pears that have been slightly damaged by fire?—READER, Santa Clara.

There seems to be no reason for giving Mangels any particular treatment for feeding to hogs. They will help themselves readily if the Mangels are furnished just as they are pulled from the ground. As to the pears, if the fruit has been dried hard so that it rattles, it would be desirable to soak for a brief time in water—not enough, however, to make the fruit too soft, nor long enough to allow fermentation to begin. It will be more digestible after this slight moistening. Both these feeds are rather succulent and both are largely carbohydrates and need something of a protein element to make a satisfactory ration. Bean meal or pea meal or alfalfa hay fed in connection with the Mangels and pears would give more satisfactory results than if the latter are fed alone.

California Raisin Machinery for Spain.

After so largely displacing Spanish raisins in American markets, it is but fitting that California should render some kindly service to her vanquished competitor, and we are glad to mention an instance in which such service is actually being rendered. In the development of higher quality and cleanliness in the lower priced raisins machines have been devised which are novel as well as possessed of great capacity and accuracy in operation. California was forced to this recourse because of high cost of hand labor, and actually has accomplished more than could have been anticipated. Not only do these machines of various kinds perform their services for a mere fraction of the cost of hand labor, but they readily accomplish a wonderful volume of work with uniformity which hand labor could not attain. Our machines, then, have completely reversed the raisin manufacturing situation. We began to invent and manufacture them so that we could enter competition with Spain. We have succeeded so far that now Spain cannot compete with us for some branches of the raisin trade of the rest of the world unless she secures the devices which our packing houses contain. It is an achievement of which California inventors and machinists are justly entitled to be proud.

An illustration of this course of affairs is seen in the engraving on the front page, which shows a raisin stemmer, cleaner and grader which Mr. James Porteous of the Fresno Agricultural Works has just shipped to Mr. D. Arguinban of Denia, Spain. This machine represents the latest type of Mr. Porteous' work and has a capacity of four tons per hour. It separates the raisins from the stems, sifts out and blows the dust and debris from the fruit, shakes the clean fruit on screens, which assort it into the estab-

lished grades of the Raisin Association, doing all the work with an accuracy and speed which are surprising.

We are glad to have this machine go to Spain. It will not only help them to a better product of loose raisins, but it will enable them to realize more fully the reason why California has been a victor in every contest with old world fruit products into which she has entered. It is the resourceful spirit of Americans which has conquered. Let the vanquished take courage and strive for the same masterful control of affairs.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending March 3, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director

SACRAMENTO VALLEY.

The weather has been warm, cloudy and rainy most of the week. Heavy rain has fallen in the valleys and snow on the mountains. At Vacaville the rain for the week ending at 7 A. M. March 1 was 5.95 inches; at Rosewood, from February 21 to 27, 7.76 inches; at Red Bluff during the week, 6.54 inches; at Wheatland, from the 20th to the 26th, 3.85 inches. Snow has fallen at Redding and Red Bluff. The storms have been accompanied by high southeast winds, causing some damage to trees and buildings. There has also been considerable damage to railroad tracks and farming lands by the breaking of levees through the rush of high waters in creeks and rivers. Grain and feed are in good condition and orchards and vineyards are looking well.

COAST AND BAY SECTIONS.

The week has been marked by extremely high winds, warm weather and heavy rainfall, precipitation having occurred nearly every day in some sections. The high winds and floods have caused considerable damage to both agricultural and commercial interests. Telegraph service has been interrupted, railroad traffic delayed, buildings and fences demolished, and trees uprooted. The actual loss, however, is probably more than compensated for by the benefit that will be derived by farmers and orchardists. There is now every indication that large crops of grain, hay and fruit will be gathered in all sections. Grain and grass are growing rapidly. Deciduous fruit trees are in bloom.

SAN JOAQUIN VALLEY.

Rain has fallen nearly every day during the week, accompanied by warm weather and high southwest winds. Some damage has been done by floods and wind, but the loss will be light as compared with the great benefit to all agricultural interests. As soon as the soil becomes tillable plowing and seeding will be resumed, and there will be a considerable increase in the grain acreage. Wheat, barley and alfalfa are looking well and have made good growth during the week. Feed is springing up and growing rapidly. Prospects for large crops of grain and hay in all sections are much better than at any time during the season. Orchards and vineyards are in good condition. Apricots, peaches and almonds are in bloom in many places.

SOUTHERN CALIFORNIA.

Rain has fallen nearly every day during the week, averaging something over 3 inches for the section. The temperature has been nearly normal and the southerly wind less violent than in other parts of the State. Very little of the precipitation has been wasted, as its fall was gentle and the soil in condition to absorb it readily. Grain has made rapid growth and is in excellent condition in most places. Good crops of wheat, barley and hay are now predicted. Pasturage is improving and will soon be abundant in all sections. Orchards and vineyards are in excellent condition.

EUREKA SUMMARY.—Practically no farm work has been done along the coast during the past week. Too much rain, though grain and grass are doing very well. The rainfall for February will amount to about 19.50 inches, the greatest precipitation for any month since the establishment of this station.

LOS ANGELES SUMMARY.—Fine rains came just in time to benefit vegetation, and with a few late rains full crops will be made. The ground is in fine condition for working. Feed is growing finely.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, March 5, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the Week.	Minimum Temperature for the Week.
Eureka.....	2.18	38.02	34.38	56	48	
Red Bluff.....	2.16	26.12	22.05	60	32	
Sacramento.....	1.34	15.37	16.70	61	38	
San Francisco.....	1.13	15.12	18.04	58	42	
Fresno.....	.40	5.09	9.94	61	38	
Independence.....	1.36	3.99	5.76	57	26	
San Luis Obispo.....	1.85	17.46	27.04	70	38	
Los Angeles.....	1.02	8.31	13.66	74	44	
San Diego.....	.44	4.41	8.58	71	44	
Yuma.....	.00	.48	.14	2.88	78	42



## THE SUGAR BEET.

### How a Californian Grew a Prize Acre of Sugar Beets.

Mr. T. J. Jones of Anaheim and R. H. Stine of Chino won the first and second prizes of \$250 and \$150, respectively, in a contest open to the United States offered by the Orange Judd Farmer. Thus California growers have, by growing crops in their usual way and not single acres, but large areas which inclosed the measured acres, demonstrated anew the particular suitability of California conditions for the growth of sugar beets. In its review of the subject our enterprising contemporary quotes freely from the narrative furnished by Mr. Jones, the winner of the first prize, from which we make the following extracts:

**CHARACTER OF SOIL.**—Mr. Jones' field was near Anaheim, Orange county, Cal., on land worth \$100 per acre. The soil is a clay loam, about 2 feet deep, with sandy subsoil. It is typical of the prairie or valley lands of that section. The contest acre was part of the larger area of seventeen acres of sugar beets. The land was almost level, with a fall from northeast to southwest of about 10 feet to the mile. It is known as a semi-moist soil when rains are normal, say 15 inches rainfall from November to April. "In southern California we never expect rain during other months, though we have occasional showers in October and May. We had a dry spring and season last year, having only 12½ inches of rain, following three very dry years."

Prior to 1880 this acre, with other thousands, was a range for wild horses. Since then it was used for sheep pasture, barley and corn, being in barley exclusively for ten years prior to 1895. In 1898 it was planted to sugar beets, but owing to the dry year and absence of irrigation, there was no crop. On the other hand, in the comparatively wet year of 1894, part of this tract yielded renters as high as twenty-two tons of beets per acre without irrigation. In 1899 this particular lot was barley, but the crop was light, as there was only 5 inches of rain. The dry period continuing, the land was not plowed in 1900. Some mustard and wild sunflowers grew, but not luxuriantly, and there was no sod. No manure or fertilizer of any kind was ever used on this field.

**PREPARATION OF LAND.**—This land should have been fall plowed and planted in January to get the best results, as that method would have cost less than the latter planting, would perhaps have saved irrigation once or twice, and would have produced more. As it was, the soil was plowed 8 inches deep March 7, 1901, with a Solid Comfort sulky plow drawn by four good horses. It took about five hours to plow this acre in connection with the rest of the lot, the plowing being done by contract at \$2 per acre. The field was not subsoiled, but was harrowed the day after it was plowed with a twin harrow and two horses, at 25 cents per acre. "Unfortunately the fertilization of the beet field in this section is almost unknown, yet we must come to it. Two of my neighbors grew sugar beets for four consecutive years on the same field without manure, reducing the annual yield from fifteen tons per acre at the start to six tons the fourth year. Yet a dressing of one-year-old stable manure during the fifth and sixth years brought the crop back to its original yield of fifteen tons per acre, showing how readily the beet answers to fair treatment."

The land should be plowed in October or November, provided it does not break up in large dry clods. Land plowed thus early, when broken in good condition, has the benefit of December and January rains, and is then generally well settled and ready to be prepared for planting. Before plowing, the land should be clear of all rubbish, as it is sure to get to the surface, clog the cultivator and tear the young beet plants from the ground.

**IRRIGATING.**—I waited for rain until April 10, but none coming before putting in the seed, proceeded to irrigate the land, which was necessary to get an even germination. The land was first blocked in squares, eight steps wide, and ditches made at even points to carry water when needed, these two operations costing 75 cents per acre. The land was then flooded with water until it was soaked to a depth of 2 feet. When it dried so that the surface could be worked, the water line showed high and low spots, which were first leveled for after-irrigation. The blocks were broken up by leveling the ridges that ran east and west, and repairing those that ran north and south, that they might hold the water in place later. The ridges were then harrowed lengthwise, also the whole surface, with a twin-tooth harrow, the teeth standing straight and running deeply. The field was then rolled across the ridges and over the whole surface, then harrowed again, thus thoroughly pulverizing the soil and making a perfect seed bed, in which the drill would readily cover the seed. The cost of this first irrigation and preparation was \$7.25 per acre, while the hoeing and rolling cost 71 cents.

**PLANTING.**—The planting was done May 9, with a Moline seeder, drawn by two horses (at a cost of 40

cents per acre), using twelve pounds of A. H. K. No. 1 seed per acre. No replanting or transplanting was necessary, as there was a perfect stand one week after planting. The shoes of the drill must be prepared and evenly sharpened, so that all four rows will be planted the same depth, and the gauge such that each box will sow the same amount of seed. We aim to cover the seed from ½ to 1 inch deep, in drill rows 18 inches apart, but with earlier planting ½ inch deep is enough. The best way to regulate the depth of sowing is to have a shield attached to the drill's shoes to prevent its going beyond a certain depth.

In a large field, the best plan is to have two harrows, one to follow the other, and the roller to follow immediately before the loosened soil is cloddy or has lost its moisture. Unless this is done, many clods will become hard and keep the soil too loose to properly retain the moisture. Especially where the plowing is done late, as in this case, there is great danger of leaving the soil too loose. The only safe way to avoid it is to harrow each day to the finish, with the harrow teeth standing straight so as to run as deeply as possible and well sharpened. To best retain the moisture, harrow not once or twice, but until the ground is so solid that as you walk over it you have a firm foundation.

**CULTIVATION.**—Before the plants were up, the field was lightly harrowed crosswise. The soil being so firm after the heavy irrigation, some of the seed was not covered by the seeder, and was better covered by the harrow without being displaced.

The plants were fairly visible the full length of the rows on May 16, over the whole field of seventeen acres. The weather was warm and clear, average maximum temperature 68°, with 55° as the minimum. In May, or often in April, the plants will begin to show in four days, if not planted too deep, but in this case, seven days were required.

By June 3, the beets being ready to thin, they were first rolled with a light roller, covering four rows at a time, or the width of the drill. This was done to break down the ridges on each side of the beet row, so that the cultivator would not push the dirt onto the young plants. The next day after rolling, when the plants were standing erect, the acre was planted as closely as possible to the plants, the cultivator working four rows at once. This makes thinning easier, and the thinners pulled out every weed in the beet row as carefully as they took out the surplus beets, thus saving much time and expense in hoeing afterward. The acre was thinned June 7, leaving a good plant every 8 inches—no closer than 8 inches or wider than 9 inches apart. The field was then carefully hoed, three men each working three days hoeing seventeen acres at a cost of 80 cents per acre. Great care was taken that no beet was covered by the hoe or cultivator, as lost plants will insure a light yield.

The field was irrigated a second time on July 6, the water costing \$3.63 per acre, and a man to care for the water five hours \$1. As soon as the water had dried off sufficiently, the beets were again cultivated to a depth of 3 inches, leaving a nice mulch 2 or 3 inches deep. The lot was irrigated again on August 7, after which a man went over the beets carefully, pulling weeds in the row and hoeing between the rows. A light irrigation was given September 16.

#### STATEMENT OF COST.

March 7, plowing.....	\$ 2 00
March 8, hoeing.....	25
April 10, blocked for irrigating.....	75
April 19, water for pumping plant, \$3.57; man for irrigating, \$1.....	4 57
May 6, leveled and ridged land.....	1 93
May 7, rolled and harrowed.....	71
May 9, planting.....	40
Twelve pounds seed.....	1 44
May 10, hoeing crosswise.....	25
June 3, rolling.....	20
June 4, cultivating with four-roll cultivator.....	1 25
June 7, thinning.....	4 00
July 5, hoeing weeds preparatory for irrigation.....	80
July 6, irrigated.....	4 62
July 10, cultivated twice.....	4 70
August 7, irrigated.....	4 77
August 12, hoeing and pulling weeds.....	28
September 16, irrigated fourth time.....	1 61

Total cost to harvest.....	\$30 23
October 25, plowing with Pike plow.....	1 50
October 25, topping and loading at 62½c per ton.....	13 52
October 28, hauled to station 21.6 tons at 50c.....	10 80
Interest on value of land for one year.....	6 00

Total expense, including irrigation.....	\$62 05
Received for crop.....	92 01

Net profit for acre.....\$29 96

**HARVESTING THE BEETS.**—The beets, as harvested, weighed from one-half to three pounds each, were smooth and about a foot long, their average weight being about 1.13 pounds. The rows of beets were first plowed out with a Pike patent beet plow. It took five hours to plow them out, and the same time to top them by eight toppers, four of whom were children. The rows running parallel with the contest acre were harvested first, then the acre was measured off, plowed out, pulled, topped and hauled to the receiving station in six four-horse wagon loads.

For pulling we used Pike's patent puller. It is like a plow, except that the standard is bent a little

to one side, so as to avoid striking the beet row. At the foot of the standard is attached a steel point about 3 inches wide that runs directly under the beet row, cutting the top root and raising the beet a little, loosening it enough for the topper to easily lift it from the ground. The topper, crawling on his knees, and carrying a long butcher knife, catches hold of the leaves, lifts the beet with the same hand that holds the knife, catches the root with the other hand and then instantly cuts off the tops just under the last leaf. Eight rows are thrown together, a place for the piles being first raked off clean with a garden rake. When the hauler gets to the field for his load, he drives between two rows of topped beets, and the toppers generally throw the beets on the wagon with beet forks.

The beets were hauled to the cars, weighed by the American Beet Sugar Co.'s weighman and shipped to the factory at Chino, 60 miles away. A sample was taken from each load by the sample catcher, as the beets were dumped into the car. After being weighed, the loaded wagon is driven upon the dump and in from three to five minutes the beets are safely delivered into the railroad car.

**THE RESULTS.**—The crop from this contest acre weighed out 43,290 pounds net. The average analysis was 11.65% sugar, with a purity of 74. This was a very low purity, owing to the unfavorable weather described above. All work done on this acre up to harvesting was the same as on the other 16 acres of the lot. Plowing, thinning and harvesting were done by contract, the water, irrigation and other work being paid for by the hour.

In an ordinarily moist season irrigation would not be necessary, and those items of cost, aggregating \$18.25, would be added to the profits. Of course, the money required for harvesting did not have to be advanced, but was paid out of the cash received for the crop. Without irrigation last year this land would not have made a crop, but the figures show that an expense of \$18.25 per acre for water, added to \$10.98 for the other items—a total expense of \$30.23—returned a profit of \$29.96, after paying 6% on value of land and cost of transporting the crop. Any one ought to be satisfied with 100% profit on money invested in irrigation and labor!

## THE POULTRY YARD.

### Timely Hints.

TO THE EDITOR:—"Have you any chicken ranches for sale?" said a prospective purchaser to a real estate dealer in the writer's presence a few days ago. Every season the same inquiry is made by new comers who have—quite properly, in the first place—persuaded themselves that our climate is unexcelled, and then that poultry raising here can surely be conducted successfully from start to finish.

The procession steadily moves. Annually there are persons who once had visions of a comfortable income to be derived by conducting a poultry business, who find that things are not as they seem and who drop from the ranks. So, in the case above noted, the inquirer was told "Yes, there is a place on our books, well fitted up for the purpose you mentioned, upon which the owner has spent considerable money; but he has got into deep water and now must retrieve if he can."

So No. 2 is ready to step into the shoes of No. 1. It is an old story. The writer has seen it repeated again and again. A person who has not been successful in other ventures will say, "I am sure I can make money in the chicken business. Any boy can do that." But numberless details have to be mastered. Constant care must be exercised, and, withal, one must have an unlimited amount of patience and perseverance. To be a successful poultryman one must have much of the bulldog grit in his makeup. Failures will come; mistakes will be made. But these should be but stepping stones to higher achievements.

**WHAT TO DO NOW.**—These months are very favorable for incubating and raising chickens, if one has the proper appliances. The incubator room must be of an even temperature if the best results are to be had. Look well to the ventilation. Do we place a proper value upon a good supply of pure, fresh air in these rooms and in the brooder houses as well? We think the little chicks must be kept from the outside atmosphere, and they must, if it is at all chilly, during the first weeks of their lives; but, as early as possible, get them accustomed to the open air and freshly turned earth.

Some persons tell us that if earthworms are fed to the young chicks the result will be that the little ones will be afflicted with gapes. Our observation does not confirm this assertion. If there is any one thing to which little chicks are partial, it is earthworms. Fed in moderation, they will thrive upon this diet, in conjunction with other food. We always give the youngsters earthworms and have yet to note the first attack of gapes. Consequently, we think the dreaded disease is the result of feeding other foods, or, possibly, by breathing foul air in the brooder. [The connection between earthworms and



gapes is established, but it does not follow that all earthworms have the germs of the gape worm. In California they seem to be largely free, as our correspondent says.—Ed.]

**BROODERS.**—The brooder needs more attention than the incubator. Following the instructions that are sent out with every incubator, one may have at least moderately successful hatches. But there are many brooders which are nothing but death traps. Probably this is more frequently the case with home-made brooders. Persons who wish to be at the least expense possible often construct their own brooders, which they can do at small cost. The ready-made brooder is more expensive. But even some of these are faulty. The result is that countless chicks die soon after they are taken from the incubator. Is this not true in numberless instances? But it is possible for one to construct a brooder at small cost upon correct principles. There must be light, fresh air, perfect ventilation and an even temperature. Too much bottom heat will surely kill the little babies, and too much top heat is almost as bad, if not equally so. Unless the air in brooders is constantly renewed, it becomes vitiated—poisonous. With impure air, what else can we expect other than a lot of sleepy chickens, who early dream their tender lives away?

After some perplexing and disappointing experience the writer thinks he has adopted a pattern of brooder that fills the bill in every particular. Light, ventilation and moisture are all supplied, and chickens, if well incubated, thrive. One merit it has is that it can be quickly and cheaply constructed.

**NOSTRUMS.**—The "red albumen" man is on his travels in this State. He solemnly assures you that his patent chick food is just what all poultry raisers have been looking for ever since the advent of the business. Put up in small packages, retailing at an exorbitant figure, the mixture is warranted to make hens lay, whether they wish to or not. The red albumen story is an old one in the Eastern States, where it long since came to be regarded as a swindle. Now it appears we on this coast are to have it thrust upon our attention.

Not infrequently manufacturers of special poultry foods or their agents call upon the writer and persist in giving the information that theirs is the best food made, warranted to make fowls lay continuously. But the writer has not a very high estimation of these prepared foods. In the first place, they are too costly; again, we may prepare excellent balanced rations which will answer every purpose. Condiments and rich foods may force hens to lay for a while, but it is not economy to force them continuously. This matter of properly feeding fowls from the time they are three days old till they are past the laying age is an important one—one to which every successful poultry man has given much thought. If the reader has solved this problem he has made great progress toward making the business profitable. But before one becomes fully satisfied upon this point there must be much experimenting and continued labor to achieve the desired end.

**A POULTRY BUILDING.**—The writer has a new brooder house, with incubator room in one end, which works splendidly. Rough redwood boards were used, 2x4 inch studding and Cabot's building quilt. The incubator room was double-lined with the quilt. The walls of the brooder part and the roof of the entire building, between the boards and the quilt, were filled in with wheat chaff, 4 inches—the width of the studding.

The plan works successfully, getting a building quickly heated and admirably adapted to the purpose for which it was designed. For a house of this kind the "quilt" is far better than the common building paper, of which so much is used in the construction of dwelling houses.

Napa, Feb. 18.

A. WARREN ROBINSON.

## FRUIT MARKETING.

### Local Co-operation in Fruit Selling.

By S. P. SANDERS, at the meeting of San Jose Grange.

In 1890 people in the west side of the valley found themselves possessed of orchards bearing peaches, apricots and prunes. The orchards were young and thrifty, had grown to bearing age under the care and management of people who had had no previous experience with planting trees and marketing fruit.

There was a craze for planting orchards. The mania was stimulated by those who, tired of stock raising and wheat growing, wanted to sell their land, and the ubiquitous agent was ever ready to bring the tenderfoot and the rancher together for bargains.

Thus it happened that beginners thought only of buying land and planting trees, never making any forecast of the time when their trees would begin to bear fruit, or planning an outlet for or sale of the product. They seemed to have a childlike confidence in Providence that things would turn out all right.

The canners had been paying very good prices for as much fruit as they thought best to pack, but when they had received as much as they wanted they would not take any more at any price. Apricots could be

carried fresh to the East. San Francisco could easily be glutted, and the only alternative was the evaporator.

It was at this time universally conceded that apricots to be presentable as a food must be cured by artificial heat, consequently evaporators of diverse models and widely varying degrees of usefulness were set up, vying with each other for supremacy.

There were a few drying establishments scattered about the valley, mostly in the region of the Willows, at which small lots of fruit could be disposed of, but the capacity of artificial evaporators was so small as to be inadequate to care for the rapidly increasing product of the new orchards.

While the growers were in uncertainty as to what could be done to save themselves from loss of their fruit, buyers—both the canneries and driers—were very reticent. They offered no advice, but adopted a waiting policy, well knowing that plenty of fruit would be brought to them, and urged upon them at any price they might choose to offer, if only the grower would sit still until his fruit was ripe and ready to pluck.

This waiting policy on the part of buyers worked to their satisfaction. There was some fear among them that some of them might enlarge his plant, increase his facilities and bid upon fruit, thus creating competition, and that the grower would find it out and contend with them for a better price.

The Buyers' & Driers' Union was formed. Every meeting was an executive session. They framed their policy and pledged the members to secrecy and fidelity. The key to the situation was "Wait; don't buy till the grower has to sell."

**SELF-HELP.**—"The gods help those who help themselves." A few growers at West Side resolved to try to force themselves from this thralldom and to put themselves in a position to have a say in naming a price for what they had to sell.

A company was formed and incorporated with \$100,000 capital, divided into shares of \$25 each. About \$18,000 worth of shares were sold, a plot of ground secured, buildings erected, trays made and all the necessary preparations made to care for the fruit of members of the crop of '91. The difficulty in disposing of apricots gave the first hint at organization, but when we got to work we handled all kinds of fruit for drying.

It is not necessary in this sketch to go into details of changes that came about, such as reducing the capital stock to \$50,000, enlarging the dry ground to double its original capacity, changing the by-laws to adjust them to new conditions as they appeared, etc.

Let it be borne in mind that the object aimed at from the beginning was to work together, in order to reap the advantage of doing things by the large way; to have a large volume of business done under our management, thus securing the best results from labor employed, the greatest uniformity of quality in prepared fruit, to cure fruit in the best manner, in the most economical way at the least expense; sell it for the best price obtainable and distribute to contributors of fruit the net proceeds; and, lastly, to have the brand earn a reputation that would cause the fruit to be sought after in the market.

I may mention that the evaporators using artificial heat went out of use about this time. The idea exploded and we found that apricots cured in the open fields by sun heat were superior, and we found it out in time to escape the folly of investing in evaporators.

**THE ORGANIZATION.**—The West Side Fruit Growers' Association is a corporation, but it does not buy and sell to make a profit to give out in dividends to shareholders. It is maintained as a convenience, but the burden is not equally distributed.

The owner of many shares enjoys the distinction of having many dollars lying idle, earning nothing, while the owners of few shares have but few dollars lying idle, and on the strength of it enjoy all the privileges that go with ownership in the association.

The West Side Fruit Growers' Association has long been aware of defects in its plan of organization and reference has been made to some of them here solely for the purpose of hinting that there is a better way, if any contemplate forming associations for a similar purpose. The Rochedale plan of co-operation is simple and just and is well adapted to the business of caring for and disposing of fruit.

**OTHER ASSOCIATIONS.**—Soon after the West Side Fruit Growers' Association began work other associations were organized on similar plans, viz., Campbell, Millory Co., East Side, Berryessa County Fruit Exchange, and others. It seemed a waste of energy for each of these unions to seek a market for its output. So four of these—West Side, East Side, Campbell and Exchange—joined in establishing the California Dried Fruit Agency, a very simple and inexpensive arrangement, renewed from year to year, conducted by a board of control, which is made up by each of the above-named unions, sending one member of its board of directors to sit in council once a month and tell their employed manager what to do. He conducts all the negotiations for disposing of the fruit gathered by the four associations, and the proceeds of sales go to the unions which contribute the fruit to be sold, and, of course, each union distributes the proceeds to its individual members, according to its own rules.

The unions have maintained their organizations in-

tact while going through the trying experience of the last two years with the California Cured Fruit Association, deflected, however, in some degree from their course, but with the expiration of the present growers' contract next June they will be entirely free to return to their former method of selling, which has been satisfactory.

Perhaps it is out of place to mention the California Cured Fruit Association in this connection, as I was only invited to tell about the West Side Fruit Growers' Association. I will not indulge in any comments in the way of praise or blame for the association, but to accomplish the end in view when we formed it we will do well to go back to the system of neighborhood co-operative associations engaged in curing fruit and putting it all into one channel going to market, or, to put it tersely, multiply the four co-operative unions by twenty-five and magnify the California Dried Fruit Agency one thousand diameters and let the force of gravity which is at work in the moral and business world work it out.

## FRUIT PRESERVATION.

### The Olive Problem.

By W. B. NICHOLS at the Reedley Farmers' Institute.

Your committee has honored me by asking me to prepare a paper "On the Growing and Curing of Olives," more especially the curing, and as the subjects are broad ones, and this paper must of necessity be short, I shall not attempt to go into details, but try to give you my ideas on the main points.

First, we naturally want to know whether or not olive growing bids fair to become a paying business. In my opinion it will become so in this section when the art of pickling is more clearly understood.

Our olives are ready for market from three to six weeks ahead of the northern or southern crop, and this counts with olives as well as with other fruit products. In addition, there is a growing Eastern demand for California pickled olives, both ripe and green. But to secure and hold this class of trade takes persistent work. The jobbing trade does not care to handle them, for they can get no two lots alike, and will all tell you that the California pickle does not keep, will not sell, etc., etc. Unfortunately, in many cases this is true.

But I find the Eastern retail grocer ready to take hold of them, provided I am willing to guarantee them, and this I am always glad to do, and usually get duplicate orders from them. The local demand is a growing one, but of course cannot be depended upon to handle a large quantity.

**VARIETIES.**—As to variety, I believe that the Mission and Manzanillo stand at the head of the list. The Mission is rather the best keeper, but ripens later, and by experts is said to lack flavor when pickled. They are both valuable for oil, in fact these, with the Navadillo Blanco, are among the best for oil making.

**CULTURE.**—The care and culture of the olive does not differ materially from that of other orchard trees. I would advocate low heading, plenty of water, good cultivation; no pruning except to keep suckers off, for the first two seasons, unless they make an exceptionally strong growth. After that, shorten in the branches and thin out in center so as to give plenty of sun and air. I would recommend planting Manzanillos 20 feet apart each way, and other varieties at least 22 feet.

**PICKLING.**—Pickling olives is not an exact science and, so far as my experience goes, it is folly to attempt any set rules. I paid a man \$200 to teach me "how to do it," and I think it was a very good investment; still, for the life of me, I cannot see that he told me any very great trade secrets; still he impressed upon me the necessity of attention to little details and, of course, gave me much valuable information.

My advice to a beginner would be to study the rules laid down by the University of California experiment stations; begin in a small way, watch results and do not get discouraged if things do not work just to suit the first time trying. Bulletin No. 137 has some very valuable information on this subject.

**OIL.**—I would not advise any one to undertake oil making without employing an experienced man to superintend it, and getting a good crusher, press, filters, etc. And, as these require an outlay of much money, it is doubtful if it will pay except on a large scale. The marketing conditions do not favor the small maker, as his small product will not warrant expensive bottle labels, wrappers, etc., nor an outlay for advertising and bringing his product before the public. Then, too, he must remember he has got to compete with the adulterated article. A case in point in our own neighborhood: One of the leading grocers of Fresno told me that he could sell more "Union Salad Oil" (which has not a particle of olive oil about it, as I understand), at 80 cents per gallon, than he could of pure California olive oil at \$2.50.

**FOOD VALUE.**—I cannot close this paper without a



word in regard to the value of the products of the olive tree as articles of food. Olives, as cured in California, whether ripe or green, for really they are green only in name and color, for they have practically the same oil contents as the black ones, are both nutritious and wholesome and, at the price for which they can be had in our local markets, will give beef, potatoes and bread a close rub from an economic standpoint. Olive oil, too, should be more generally used in our homes, not alone in the preparation of salads, but for cooking. If used in cooking fish, eggs, etc., and for shortening in place of lard, it would add but little, if any, to our grocers' bills and make a great saving in doctors' fees, to say nothing of freeing us from the horrors of dyspepsia. And if there be among you any who, like myself, were brought up to eat doughnuts and coffee for breakfast, let them try cooking them in California olive oil instead of lard, and then say, if he can, that they are not as good as mother made.

#### California at the St. Louis World's Fair.

TO THE EDITOR:—The undersigned have been appointed as a committee to advance the interest of the California exhibits at the World's Fair to be held in St. Louis in 1903, in commemoration of the one hundredth anniversary of the Louisiana Purchase. That the fair will be great is beyond question. In this connection we wish to point out to you a few facts and figures by way of comparison. The Centennial Exposition at Philadelphia covered 236 acres; the Paris Exposition of 1900, 336 acres; the Columbian Exposition at Chicago, 633 acres; the Pan-American, 350 acres. The St. Louis Exposition will cover 1200 acres. The construction cost of the Paris Exposition was \$9,000,000; that of the Columbian Exposition, \$18,322,000. The construction cost of the St. Louis World's Fair, according to the estimate, will be \$30,000,000. To meet this expenditure ample funds are in sight. The Federal Government has appropriated \$5,000,000, the city of St. Louis \$5,000,000, various citizens of St. Louis have subscribed an additional \$5,000,000 and the State of Missouri has appropriated \$1,000,000, amounting in all to \$16,000,000, not to speak of the other States of the Union and the various foreign nations that are taking steps toward making exhibits. A number of the States already have made handsome appropriations.

As old Californians, we have a pride in our native State, and we shall be disappointed if the State falls

behind in this important matter. It is to be desired that the State itself will not only make a large appropriation for an exhibit, but that the various counties and chambers of commerce and private individuals will also make exhibits at the Fair.

At the expositions given during the last ten years California has been first and foremost, and has succeeded in taking back to the Pacific Coast the lion's share of the awards and medals. It is desired by all friends of the State that she should do the same at the coming exposition at St. Louis. That such can be done is undoubted by those who know of the magnificent resources of the State, for there are few sections of the country so richly endowed by nature. Within the State is every kind of mineral wealth, while her deciduous and citrus fruits and other agricultural products lead the world in point of both quantity and quality. California has forests of all kinds of timber, quarries of all kinds of stone, mines of all kinds of mineral, plains of all kinds of cereals and gardens of all kinds of fruits.

The crying need of the State is capital to properly utilize and develop these immense riches given by nature. The opportunity of advertising these resources and of interesting capital therein by proper exhibits at the coming fair cannot be overestimated. Here will assemble the people of the world. The product of the State thus being put before the world's eye cannot but result in great and lasting benefit to the State. Twenty millions of people now inhabit the domain of the Louisiana Purchase, but these are only a few of those who will probably be interested in the great Louisiana Purchase Fair.

Being on the grounds and in close touch with the management of the Fair, we believe that we can render valuable assistance to the people of California in this enterprise, and we are anxious to co-operate with them in getting a display that all of us may look upon with pride.

E. E. WOOD, Chairman.  
Q. L. GILLILLAND,  
FRANK G. TYRRELL,  
JOHN A. BLEVINS,  
CARROLL M. DAVIS,  
California Committee.

603 Chemical Bldg., St. Louis, Mo.

WHEN a man has accomplished something of importance by dint of hard work and much experimenting there are always people who bob up and claim priority of invention. If an idea passes through a man's head that so and so might be done, and several years afterwards another man comes along and act-

ually accomplishes what the first man dreamed might be done, the first man immediately claims that he was the originator of the idea. This is absurd. Credit should be given the man who not only thinks of an idea, but who carries it out to a practical end. The world is too full of dreamers.

THE following quotation is taken from a recent work of the director of the psychological laboratory at Yale University: "Although a frog jumps readily enough when put in warm water, yet a frog can be boiled without a movement, if the water is heated slowly enough. In one experiment the water was heated at the rate of .0036 of a degree Fahrenheit per second; the frog never moved and at the end of two and one-half hours was found dead. He had evidently been boiled without noticing it." At any point of time the temperature of water was in such little contrast with the temperature a moment before that the attention of the frog was never attracted to the temperature of the water at all; so the frog was actually boiled to death without knowing it.

REAL GENIUS shows itself, not in the multiplication of petty details, but in the assimilation of existing materials and their incorporation into a broad and comprehensive design. An engineer shows his ability by utilizing what materials he finds ready at hand, rather than by the creation of special forms a little different from what has been used before.

THE only weight measure common to the troy and avoirdupois weights is the grain. The avoirdupois pound contains 7000 grains and a ton of 2000 pounds 14,000,000 grains. The troy ounce is 480 grains, so there are 29,666 $\frac{2}{3}$  troy ounces in one avoirdupois ton, and one troy ounce is .00318146 of 1% of a ton.

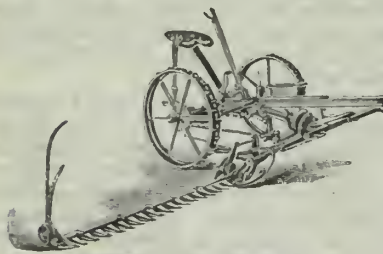
THE water of a spring containing free carbonic acid gas, what is popularly termed a soda spring, should not be conducted through lead pipes. The carbonic acid dissolves the lead forming carbonate of lead in solution, which, if drank, will accumulate and ultimately produce lead poisoning.

At a depth of 20,000 feet the air would have such compression because of its own weight that a temperature of 60° F. at the mouth of the shaft would be near 300° at the bottom. A depth of 10,000 feet is probably the limit of deep mining.

WOOD may be made flexible and non-inflammable by coating it by immersion in a 6% solution of caustic potash or a 5% solution of caustic soda.

# OSBORNE MOWERS and RAKES.

## The Osborne Columbia Mower.



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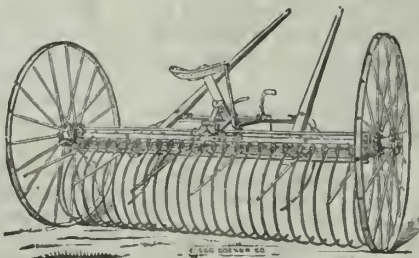
### ALWAYS IN THE LEAD. IT HAS NO EQUAL.

A MOWER with a solid one-piece frame. No bearings to get out of true. ROLLER BEARINGS and a gear enclosed like the works of a watch; no dust or grit to wear them out and to cause heavy draft. A PIT-MAN protected in front and in under, always as true as an arrow and with a long straight drive—CONVENIENT FOOT LIFT, A FLOATING BAR that shaves knoll and hollow, following the ground as a razor follows the face. NO LOST MOTION; gears from the pawls in the wheels to the knife head are so closely connected that the machine cannot be clogged in grass.

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If a Rake has ever been invented embodying in its construction the valuable devices found on the Osborne Rakes, it has never made its appearance either in field or factory.

It is light, durable, easy to operate, and with an unlimited capacity for work. Has the Osborne Double Hub Bicycle Wheel fitted with Roller Bearings.



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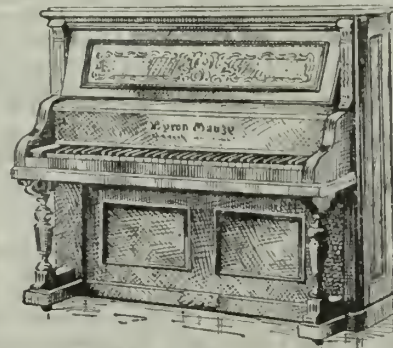
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Prunes, none finer or sweeter, 100 lbs. for 2.75  
Spices, high grade, full weight, 5-lb. tin 1.00  
Oysters, case of 4 dozen tins for - 4.00  
Soups, 1-lb. tins, assorted, per dozen - .75  
Crackers, extra sodas, quarter cases for - .55  
Our Superb Cream, case of 4 dozen for - 3.80  
Corn Starch, 40-lb. box for - 1.90  
Rolled Wheat, a sugar barrel full for - 2.75  
Beans, new pink, 100 lbs. for - 2.50  
Macaroni, 50-lb. case for - 2.25  
Olives, 3-gallon keg, fancy, for - 2.75  
Mackerel, new, bright, fancy, kit for - 1.75  
Salmon, per half barrel - 4.25  
Codfish, 30-lb. box (boneless) for - 1.65  
50-lb. bundle for - 1.75  
House Candles, per box - 1.50  
Green Peas, dried, new, 100 lbs. for - 2.75  
Table Fruit, case of 2 dozen of either  
peaches, pears, plums or apricots for 2.50  
Tomatoes, one dozen gallon tins for - 2.35  
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# Agricultural Review.

## ALAMEDA.

**THE POULTRY BUSINESS.**—Haywards Journal: As an instance of the growth of the egg business in this vicinity, 2000 dozen eggs were shipped out of Haywards to San Francisco last Monday. The Haywards Transfer & Express Co. had an entire egg cargo of about 1750 dozen, and had a number of cases left over on account of lack of wagon room. A day's shipment of 24,000 eggs shows that the hen is becoming quite a factor in this valley.

## BUTTE.

**ORANGE SHIPMENTS.**—Oroville Mercury: During the season just closed the orange shipments from Oroville were 115½ cars and from Palermo, including the Hearst grove, 264½ cars, a total of 380 cars, or 137,501 boxes. It is anticipated that with a favorable season next year a thousand carloads will be shipped from the points mentioned and Marysville. The quality of the fruit is equal to the best and it matures early.

## GLENN.

**ENOUGH RAIN FOR ONCE.**—Willows Journal: Our farmers have for the past five years been lamenting the fact that the ground was not soaked through, although they raised good crops. It is now thoroughly soaked and the damage from the overflow is infinitesimal compared with the great benefits derived from plenty of rain.

## KINGS.

**BEES VS. PEARS.**—Lemoore Leader: A joint meeting of bee keepers and pear growers met recently in Hanford, the former being represented by F. E. Brown, F. M. Hart and J. F. Flory, and the latter by J. L. Hall, C. M. Blowers and C. Clow. It was finally decided that a certain district contiguous to pear orchards should be cleared of bees for a certain period to determine the question whether or not bees do damage to pear trees by carrying pear blight.

## LOS ANGELES.

**A NEW IDEA IN PLOWING.**—Covina Argus: A. P. Kerckhoff, who owns forty acres of orchard to the east of the city, is pursuing a new method of plowing this spring. His land is stiff and heavy, and, like all orchards—especially in heavy soil—the continual cultivating at a certain depth creates a hard crust about 8 inches below the surface of the ground. For the trees to secure the benefits of irrigation and for the proper aeration of the soil, this crust must be broken. The method as pursued by Mr. Kerckhoff requires the use of three plows. He first throws three furrows toward the trees, on each side, with an ordinary three-furrow gang, graduating the shears so as not to seriously disturb the feeding roots. This completed, he uses a large disc plow, drawn by four horses, following closely behind this, in the same furrow, with an ordinary walking plow, which, combined with the disk, thoroughly breaks the hard crusty formation. This method of plowing leaves a deep dead furrow in the center of the rows, but this objection is overcome when the entire orchard is plowed by throwing the soil back into the dead furrow with a gang. This method of plowing on heavy soils pulverizes the soil, breaks the under crust and allows the lower roots to secure the benefits of irrigation which cannot be accomplished by any other means.

**LARGE PLANTING OF EUCALYPTUS.**—Pomona Times: John H. Lee owns a valuable 80-acre tract of land at Live Oak canyon, north of North Pomona. Having become interested in the traffic in real estate and other property, he does not wish to reside on his country land, and so has decided to plant it to eucalyptus. To this end, he has written to Hon. Abbot Kinney, an authority on forest trees in general and eucalyptus in particular, asking him to name the best variety of this tree to plant for fuel and for early and rapid growth. Wood for fuel is not likely ever to be cheaper than at present, and the growing of eucalyptus has in many

instances given good profits on cost of land, planting and the little attention required. Mr. Lee thinks of planting from 10 to 12 feet apart, so grass may grow between and thus make pasturage while the timber is maturing. The eucalyptus is a healthy tree, not at all subject to pests of any kind.

## NAPA.

**BUSY BEES.**—Register: "Sweetness long drawn out." That's what G. W. Marlin found in his residence (formerly the old Hedgeside home of Hon. M. M. Estee), northeast of town, last Saturday. A swarm of bees took possession of an upper and hidden quarter of the house quite a long time ago, and Mr. Marlin finally set himself the task of routing them. A section of the flooring in the second story was lifted and there were found honey and honey makers galore. "We have taken out 200 pounds of honey so far," said John Smith, Saturday, "and there is any quantity of it left to take out. Did the bees sting us? I should say so. Look at my arms. And you ought to see the face of the other fellow!"

## ORANGE.

**PROFITS FROM POTATOES AND PEPPERS.**—Anaheim Gazette: An Anaheim farmer named Peter Knapp reports profitable returns from his potato, onion and chili pepper crops. He raised eight acres of peppers from which he harvested a ton per acre, and sold them at 10 cents per pound. From three and one-half acres he harvested 1000 sacks of onions worth \$2500. From three-fourths of an acre he harvested 150 sacks of potatoes for the two crops of the past year.

**MONEY IN CHICKENS.**—Santa Ana Blade: There is certainly money in raising chickens. As an example of what may be done along this line even in a small way, the recent experience of Mrs. George W. Ford of this city is given: Mrs. Ford not long since shipped one lot of fifteen chickens to a Los Angeles buyer, who sent her in return a check for \$11.07. These chickens were less than six months old, and since that time the buyer has ordered three dozen less than three months old chickens, for which the price has been fixed at 50 cents each.

## PLACER.

**QUANTITY OF OIL FROM OLIVES.**—One of the interior papers is quoted as stating that "it takes 240 pounds of olives to make one gallon of oil." Dr. J. Manson of Lincoln, Placer county, alluding to the statement, says: "I have just finished pressing, and am surprised to note the difference in yield. I find that the Rubra olive, grown here in the foothills (elevation 250 feet), makes a full gallon of high-grade oil to each 40 pounds of olives, and the Mission, the same as in the Cooper orchard, makes a full gallon to 60 pounds. These trees are growing on Placer county granite land that was originally very heavily timbered, and the olives were ripe in October. I do not irrigate my olives and they grow large and fine."

## RIVERSIDE.

**LARGE GRAIN PLANT.**—Press and Horticulturist: There has just been completed an enterprise in land breaking that would stagger even the farmers of Kansas or the grain kings of the Dakotas. Tom Kerr last week plowed and planted to grain a field embracing 5500 acres of land. The work was done with Mr. Kerr's big traction engine, pulling a group of fifty-five plows, thus turning the soil most rapidly and in an entirely satisfactory manner. The timely arrival of the glorious rains, which are falling with unstinted abundance, makes the complete success of the project more assured.

## SAN BENITO.

**A FIVE-ACRE POULTRY FARM.**—Advance: R. E. Bryant has a five-acre poultry farm near Hollister. One acre is planted in alfalfa, which is cut and fed daily to the poultry. He has 1100 hens, which are kept in six different pens. The houses are large and roomy, the sides hung on hinges. Each morning these sides are raised full height, so that the sun and wind can thoroughly ventilate, fumigate and dry the houses. At night the sides are closed down, furnishing warmth to the feathered inhabitants. By this method of ventilation the floors are always dry and the roosts free from vermin. City water is piped to each pen, Mr. Bryant having found that pure water is one of the prime requisites of success in the poultry business. The hens are supplied with an abundance of gravel and shells. The labor of caring for the poultry, shipping eggs, etc., takes about one-half the owner's time. All the buildings on the place are whitewashed thoroughly several times a year. Illustrating the profits of the business, we have before us the returns for the month of December, 1901. From the 1st to the 27th the cash receipts were exactly \$208.95, after paying freight and commission. The expenses were: Water, \$2.50,

feed, \$50; which left the owner \$156.35 for his labor for the month. The average expense for feed the year around is slightly under \$50 per month.

## SAN DIEGO.

**BIG CROP OF RABBITS.**—Union: C. Jones of Green valley reports the loss of some 300 apple trees and is waging war against them with strychnine. Dr. Stanchard of Merle complains a great deal of their ravaging his vegetables, and numerous others are complaining of damages incurred by the mule-eared pests.

## SAN LUIS OBISPO.

**DAIRYMEN MAKING MONEY.**—Cayucos correspondence San Luis Obispo Tribune: The ocean has been very rough for a number of days—so rough that the steamers have missed several landings. On this account all the butter except that going north last Wednesday has been sent to San Luis Obispo for shipment by rail. One of the largest loads ever taken out of Cayucos was hauled by E. A. Villa last Monday, consisting of forty-seven boxes, or a net weight of about 5640 pounds of butter. The shipments of butter continue at about 100 boxes, or nearly 12,000 pounds, every four days. At present the dairymen are the happiest people in this section, and they smile as the dollars pile up on their respective bank accounts. The average price for first quality dairy butter last shipping day was 25½@26 cents net, with some sales as high as 26½ cents. Four buyers are in the local market and competition is sharper than it has been in years. The dairymen can make a living profit on butter at 15 cents per pound, from which it can be seen that this is a rich year for them.

## SANTA BARBARA.

**A LUCKY CATTLE DEAL.**—Ventura Democrat: Harry Sexton and Charlie Conaway closed a deal only a day or two before the beginning of the recent rainfall for the purchase of 700 head of cattle belonging to the estate of the late Cyril Doulton of Miramar. The boys bought the lot at a good bargain, took their chances on the rain proposition and won out.

## SUTTER.

**WILL FIRE CANNONS TO PREVENT FROSTS.**—Sutter County Farmer: G. W. Harney, manager of the Abbott orchard, is arranging to try a novel scheme to prevent frost injury to the fruit buds. It is by firing cannons when the mercury falls near the freezing point. This system is used in the vineyards of France with success and is based on the principle that frosts form only in calm mornings, and that by firing heavy blank shots from a gun the air is agitated and the formation of frosts prevented. Mr. Harney has forwarded a letter to Senator Perkins at Washington asking him to obtain a permit from the War Department authorizing the use of three obsolete pieces of ordnance to be obtained at some army post in this State. The experiment will be watched with interest.

## TEHAMA.

**TOO MUCH RAIN.**—Red Bluff People's Cause: The late rains have done no good, but considerable damage has resulted from them. The ground was already well soaked and could absorb very little more moisture. The late rains, therefore, served to fill the cellars and raise the streams. While it was of no benefit to the farmers and horticulturists, it served to raise the record of rainfall for the season, which on an average is 28 inches. Of this amount we now have about 23 inches.

**BAD FOR LAMBS.**—The sheepmen are the greatest sufferers from the late storm. During the past two or three days probably all the lambs have been lost. A great many are now just in the midst of the lambing season, and if the weather could be a little better than it is they probably would appreciate it.

## TULARE.

**THE CHAMPION EGG.**—A Brahma hen belonging to J. F. Moody produced an egg

that would take the premium if there were premiums offered. This egg measured 7 inches in circumference one way and 8½ inches the other. Mr. Moody denies having fed the hen on red albumen or red pepper either, and affirms that the hen laid the egg of her own free will and just to see what she could do.

**VALUE OF STRAW.**—Albert Nelson is resting easy about feed for his stock, having not yet forgotten the lesson learned in 1898, and so he is now feeding straw put up in 1899, and very little of it has been spoiled by the weather. Last year he put some of the poorer straw on the roads and sold a few loads, but saved all the rest and thinks that he has enough to carry him through. As to the value of straw, Mr. Nelson thinks that, load for load, it is more valuable for general feeding than alfalfa hay, if the stock can get a little saltgrass or other green feed to go with it, so that not all they have will be dry, and he has kept stock on straw alone. The fact is it is about as sensible to burn hay as it is to burn straw to get it out of the way and save putting it up. When all farmers get to saving their straw and wild hay, as a few now save it, dry years will not be so hard to bear, though they will not be agreeable even then.

## YOLO.

**WATER HIGHER THAN FOR MANY YEARS.**—A Sacramento dispatch under date of 28th ult. says: The water at Knight's Landing is higher than it has been for thirty-five years, and a considerable section of land is under water. The famous stock farm of the late Senator Fair in Yolo county is inundated. The railroad track has been washed out at Curtis Station, between Woodland and Knight's Landing, and half a mile of the track was washed out a short distance east of Marcuse, in Sutter county.

## SUTTER.

**A PROLIFIC SECTION.**—Yuba City Independent: The power of producing in abundance, of which Sutter county is famous, does not alone lie in her soil but is a distinguished trait of her animals. To prove this, we have information from Messrs. Foderhase & Wadsworth, of Sutter City, that they own a ewe which recently gave birth to five lambs, all strong, playful youngsters. Also, from Austin Cramer, near Knights Landing, who owns five sows that are the mothers, respectively, of twelve, thirteen, fourteen, fifteen and sixteen pigs. Another report from Chas. Green, of southwest Sutter, states that three of his ewes recently had ten lambs, one giving birth to four and the other two having three each. James O'Connor, on the Lee ranch, near Tudor, claims the honor of owning a ewe with four lambs.

No; You Cannot Sell "any old thing" merely by advertising. Many liniments are advertised. Only one, Perry Davis' Painkiller, has stood the test of sixty years. To-day it is more popular than ever. 25 and 50c.

**CURE YOUR COLD WITH R. Hall's Pulmonary Balsam.**



**OLEO or BUTTER?**

Ranch or Farm stock, stay in PAGE enclosures. PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.

**\$300,000,000.00 A YEAR**  
and you may have part of it if you work for us. Uncle Sam's poultry product pays that sum. Send 10c for samples and particulars. We furnish capital to start you in business. Draper Publishing Co., Chicago, Ill.

**CYPHERS INCUBATOR,**  
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**A FENCE MACHINE**  
That combines Simplicity, Durability, Rapidity and Economy. The DUPLEX. It makes over 100 Styles, 60 to 100 rods a day, of Horse-high, Bull-tongue, Pig and Chicken-light Horse-high, Built-strong, Pig and Chicken-light Horse-high. Fence that combines Strength, Uniformity, Permanency, Reliability and Efficiency AT COST OF WIRE. Machine on Trial. Full information free. Wire of every description at Wholesale Prices. Write today. KITSELMAN BROTHERS, Box D7, Tuncie, Ind.

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GOMBAULT'S  
**Caustic Balsam**  
A Safe Speedy and Positive Cure  
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.  
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**TRY THEM FOR**  
Coughs, Colds,  
Asthma, Bronchitis,  
Hoarseness,  
and Sore Throat.  
Fac-Simile Signature of *Wm. S. Brown* on every box.

**Beats 'em all.**

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against any possibility of failure in your next season's poultry operations by buying an incubator of tested merit and known worth CANNOT FAIL. **THE PETALUMA INCUBATOR**  
is a machine of that kind. It is the machine that produces only high percentages of hatch. Made of best California Redwood, carefully packed and lined, perfectly heated and regulated, it gives satisfactory results every time. Made in sizes from 50 eggs up. WE PAY FREIGHT ANYWHERE IN THE U. S. It will pay you to get our FREE catalogue and prices. Address nearest office. Box 217 Petaluma, Cal., or Box 217, Indianapolis, Ind.



## THE HOME CIRCLE.

## Grandfather's Cider.

You can talk about the fluffy, puffy bread  
as white as snow,  
The apple tarts and golden marmalade,  
The pumpkin pies of monstrous size all  
shinin' in a row,  
An' various other things that "mother  
made;"  
But, as in vivid retrospection I live once  
again the past,  
There is one thing from me naught can  
take—  
It's the pleasant recollection (in its spell  
it binds me fast)  
Of the apple cider grandad used to make.  
I remember—I remember long ago, when  
life was sweet,  
An' we'd gather round the fireplace at  
night,  
As we'd pile the logs on higher, keepin'  
up a roarin' fire,  
An' we all would scrooch up close—my,  
'twas a sight!  
Then we'd roast a cup of chestnuts, while  
the old folks told us tales  
An' we'd round off with a monstrous  
chunk o' cake,  
Then we'd all look sort of solemn like we  
orten't, but we did,  
Drink the apple cider grandad used to  
make.

—Phil H. Armstrong.

## When Mehitable Loved.

Her parents handicapped her at the  
very baptismal font, for the name  
bestowed upon her, Mehitable Hop-  
kins, was enough to mak a spinster of  
the loveliest girl ever born. When she  
left school they bore her off to Europe,  
where, while her five years of travel  
gave her an excellent knowledge of  
men in the composite, man as an indi-  
vidual was entirely unknown to her.  
Then followed her father's death and  
her mother's long years of illness, when  
all the daughter's thoughts and ener-  
gies were concentrated on the sick  
room. Finally, to complete the bands  
which all her life had been forged to  
keep her in single blessedness, she  
found herself at thirty-five with a very  
comfortable fortune and not a sign of  
a near relative with whom to share it.  
So that she hadn't even that question-  
able excuse of becoming married for  
the sake of a home.

If Mehitable had been a poor girl she  
might have proved a genius, for she  
could paint so cleverly as to make her  
rivals decidedly uneasy. But now that  
she found herself a lonely woman, with  
cruelly plain silver lines over her  
temples, and no longer any traces of  
the old-time dimples where the sharp  
knuckles now showed, her only re-  
source was her palette. One thing  
she stoutly refused to do, however, and  
that was to make a workshop of the  
old family home. She at last hit upon  
the tiny brown cottage in the next  
square, where all the surrounding,  
towering residences looked in heartless  
disdain on the tumble-down frame  
house which the owner, a weak-voiced  
little old man, had clung to desperately  
in spite of all his fashionable neighbors'  
scorn and the tempting offers of fran-  
tic real estate dealers. The old man  
had been found dead one morning that  
summer with the rising sun's rays try-  
ing to warm his thin, white cheeks.

Then all the residents sighed in a re-  
lieved way, and the shrewd real estate  
men began to hunt up the heirs with  
new proposals for the valuable bit of  
ground, when lo! and behold! It was  
discovered that the poor dead owner's  
will was being contested by a prodigal  
son, and therefore the house would  
have to remain where it was until the  
question was settled. Again the fash-  
ionable square squirmed and flut-  
tered, for it was evident that no one  
with any self-respect would want to  
occupy the innocent cause of all this  
trouble, while there was the terrible  
possibility that some sacrilegious laun-  
dress might rent the little brown house  
and mar the whole landscape with her  
outrageous signs and long lines of  
flaunting shameless sheets and petti-  
coats.

At this point of suspended hostilities

Miss Hopkins conceived the brilliant  
idea of transforming the disputed prop-  
erty into a temporary studio, to be  
used until the long legal quibble should  
end. Whereat the entire neighborhood  
was enthusiastically grateful.

At last it was finished, and its tem-  
porary owner held a reception to the  
residents of the whole square. They  
came, one and all, and went away  
fairly delighted at the result. The low  
walls had been done in an unbroken  
gray green, and the floors laid soft and  
smooth with something a shade darker.  
The poor, battered woodwork now  
shone a dark rich red, while the tiny  
window panes, formerly so pitifully  
cheap looking, were now voted quaint  
to a degree. The chintz-covered  
couches were tantalizingly inviting,  
and the simple draperies added won-  
derfully to the artistic whole. And  
throughout it all there had not been  
done one thing to mar any of the house's  
original charm beyond the necessary  
nails and braces to steady the poor  
little wreck.

For the first time in her life Miss  
Hetty had time to be really happy, and  
the big family house up on the corner  
rarely knew her except when she  
crept back there at dusk to her soli-  
tary state dinner, and the undisturbed  
night's rest in the big, quiet chamber  
on the second floor. Canvases seemed  
fairly to fly from beneath her tireless  
fingers, and pretty soon everybody  
came to recognize her works because of  
the inevitable old man, with a thin,  
pale face, who always stood out against  
the background of the old, slanting  
brown house. When she one day  
showed the last things she had done  
the whole square tip-toed, wet-eyed,  
out into the street again, with many a  
penitent promise never again to speak  
ill of the battered little house and its  
erstwhile owner. For Miss Hetty's  
masterpiece pictured the dead, quiet  
face, there in the early sun, with the  
shadows of the morning glory vines  
across his high, lined forehead, and  
with one huge, rosy blossom trailing in  
at the open casement as though trying  
to lend some of its beautiful warmth to  
the wasted, patient cheek beyond.

"Now that I have so many, I think  
I shall try to sell them, for the orphan  
asylum on the next street is in sad  
need of money, I hear. But I think I'll  
not paint him any more," she added,  
softly, "for he's dead now, you know."  
And poor, fond, foolish little Miss  
Hetty sobbed quietly as she laid her  
trembling hand tenderly on the beloved  
canvas.

It was that same evening that Mrs.  
Wilmarth brought her brother, Major  
Doane, to see the little collection.

Mrs. Wilmarth lived just across the  
street from the big Hopkins house, and  
Miss Hetty had always found a good deal  
of comfort in the bright, busy young  
matron. She had heard of the Major's  
intended visit with no little interest,  
for she remembered him as a tall, hand-  
some boy with a hint of a small brown  
mustache and a pair of bonny brown  
eyes. He had kissed her, then a white-  
frosted little maid of ten, as he went  
off to don his first gray coat at West  
Point. Some way the tiny, wide eyed  
girl never quite forgot the beautiful,  
manly boy, although she had never  
seen him since, as their schools and  
travels had contrived to keep them  
apart. But she remembered very well  
that when she was a sweet girl grad-  
uate she was confiding in maiden shy-  
ness to her dearest friend her ideal  
husband, when that friend laughed  
gayly and cried:

"Why, how funny! You've been de-  
scribing young Captain Doane, who  
was here visiting his sister, Mrs. Wil-  
marth, only last week."

Poor Hetty blushed as red as though  
she had been really guilty, and now  
that the famous dignified Major Doane  
had actually come to see her, tiny Miss  
Hetty grew pink to the tips of her  
little ears, until Mrs. Wilmarth found  
herself wondering if it could be possible  
that Miss Hopkins were really pretty  
after all. While the clear-eyed matron  
watched the delighted hostess and her  
big, handsome brother, and they quite  
forgot her over their tea cups and the  
famous pictures, a sudden new light  
came into her eyes, and the match-

making spirit inherent in every hap-  
pily married woman quietly began its  
dexterous work.

Things went on famously. It was the  
Major who advised that the collection  
of paintings be kept for a time and ex-  
hibited one day in the week for the  
benefit of the orphans. When Miss  
Hetty shrinkingly demurred he pointed  
out that the children would be the  
gainers in the end, so she relented.  
That winter found the whole neighbor-  
hood in the throes of an extravagant so-  
cial whirl, for there was an unusual  
number of pink-and-white debutantes,  
with the still more unusual ac-  
companiment of handsome eligible  
men. Before she knew it Miss Hop-  
kins found herself in the very midst  
of the mad jollity, even laying aside her  
all-black gowns for those with hints of  
violet about the throat and wrists. No  
tea was quite perfect without the dear  
little artist's presence; no girl felt  
quite satisfied if she had not had a  
chat with Miss Hopkins between the  
dances, and even the broad-shouldered,  
fresh-voiced boys liked to creep into  
the softly-shaded little studio to ac-  
company its owner home at dusk. Her  
Monday afternoons grew famous, and  
the orphans on the corner had enough  
new shoes and quilts and real puddings  
for Sunday dinners to make them ever-  
lastingly grateful to the happy hearts  
in the tiny brown house on the next  
street.

Miss Hopkins always had the pret-  
tiest girls in town to pour on these oc-  
casions, and generally some one with  
a really good voice or an unusually  
skillful touch on the violin could be  
found to make music. Then, too, the  
pictures themselves could bear re-  
peated visits, for the poor, sweet old  
man grew very dear to them all now  
that he was not there to trouble them.  
Furthermore, it was almost as good as  
going to confession to creep up stilly  
and gently before the last of them all,  
where Miss Hopkins always kept a  
bunch of fresh violets standing beneath  
the sweet little canvas with its live  
morning glories and its sleeping man.

And the best thing of it all to little  
Miss Hetty was the Major, a tall,  
courtly major, who was so attentive  
to her and seemed to enjoy being with  
her more than any man in all her life  
had done. When a woman waits till  
thirty-six before she loves, the result  
is going to be terrible in its intensity.  
Mrs. Wilmarth saw it and trembled, ex-  
cepting for the fact that her brother  
seemed to see no one else but Miss  
Hetty, except, of course, the girls—all  
that season's buds, who flocked  
about the Major because he was so dif-  
ferent from ordinary men. Miss Hetty  
knew it and held her breath. The boys  
and girls saw it and smiled gleefully.  
In fact, everybody seemed to recog-  
nize it except the man himself, who  
went blindly on, heaping poor, flutter-  
ing Miss Hetty with compliments, and  
making open love to all the younger  
girls who gave him his tea and sat in  
open-eyed admiration as he related his  
thrilling stories of army life on the  
Western plains.

But at last even the Major knew  
it, and his heart fell like lead. It was  
one blustering evening late in the win-  
ter, and that mighty military man was  
tramping valiantly along the street on  
his way to Mrs. Wilmarth's. But as  
he passed the little brown cottage he  
noticed the light within, and turning  
up the uneven board walk, he rang  
the old-fashioned bell bravely, for the  
puzzled Major had all at once made a  
mighty resolve, and when he once de-  
cided to do a thing he never retreated,  
whether it was to take an enemy's  
camp or to brave a woman.

Strange to say, he found Miss Hetty  
alone there in the warm, rosy little  
room, with its queer old china, glisten-  
ing silver, odd pictures and rich rus-  
set-bound books. The tiny little hos-  
tess saw the determination in her call-  
er's face, and sank into her deep chair,  
knitting her beautifully kept fingers  
together in desperate hope and fear.

The Major refused the proffered tea  
almost gruffly, thrust his hands into  
his pockets, tried another chair, and  
finally strode across to the tiny bow  
window, and, with his back bravely  
turned toward her, he began:

"My dear friend, I—er—I want to  
ask you something to-night—I feel that  
we have known each other well enough  
for me not to be afraid now. My dear  
Miss—Miss Hetty," and he wheeled  
about, facing her so abruptly that she  
almost gasped, "tell me honestly, as  
though you were speaking for your-  
self—tell me, am I too old to marry?"

She had been hoping for it for months,  
but when it came she felt the little  
brown house rock cruelly. The open  
fire against which her great, handsome  
Major was outlined like a magnificent  
rock of refuge, swam before her, and  
her own voice seemed miles away when  
she finally found courage to answer:

"We love with our hearts, Major,  
and our hearts never grow old."

She saw the fine, strong face beam  
and he came to her, very close, it  
seemed to her, although she could not  
have put out her hand and touched  
him, and the soft lamplight fell on his  
beautiful silver hair like a holy bene-  
diction. Immediately her thoughts  
went back to that far-off day of long  
ago, when this same hair was heavy  
and brown and he had kissed her.

Then his voice recalled her to the  
present and she heard him say:

"You can never know how glad you  
have made me by saying that, for  
there is no woman in the world whose  
opinion I value more. Still in all my  
doubt this winter I have often feared  
that it would be wrong for me to take  
unto me a wife. I have maybe only a  
few years yet to live," he added, look-  
ing at her appealingly. And again she  
answered, softly:

"We may hope that your years may  
be many. Besides, even the few years  
will be very dear to—to your wife."

He was standing back of her chair  
now, with one hand so near that she  
felt its touch on her hair.

"Do you think," he pleaded almost  
in a whisper, "that she loves me?"

"Do you love her?" came the reply,  
with a touch of coquetry never absent  
from the feminine heart.

"Better than all else in the world,"  
came the brave rejoinder; "better,  
I sometimes think, than the world to  
come."

"Then," and she closed her eyes to  
hide the happiness in them, "then I  
may confess that she loves you, better,  
far better than she ever before  
thought it possible for any one to  
love."

The Major sprang from his place be-  
hind her and, seizing her hands, cried  
joyfully:

"Oh, my dear Miss Hetty, how do  
you know? Has she told you? When?  
Tell me just what she said, so that I  
may be the happiest, proudest man on  
earth."

All the light burned out of Miss  
Hetty's face, leaving only the ashes of  
hopeless despair. Then she asked:

"She? Who?"

"Why, Kittie Harper, of course.  
You surely know that I meant her?"

Kittie Harper, the gayest little  
black-eyed debutante that had danced  
that season and the foremost of the  
flattering coquettes that had practiced  
their budding blandishments on the  
gallant old Major.

"Yes, of course, I knew, but you see  
I wanted to make you confess," she  
replied, at last, with a laugh that  
would have awakened any more sane  
man. Then she went frantically on in  
reply to the unsuspecting man's eager  
questions.

"No, she never really told me—but  
—but I know when a woman loves."

All this time the elated Major was  
putting on his coat and gloves, and at  
last he asked, with a return of his old-  
time courtliness:

"I want to thank you, Miss Hetty,  
for you have done me the greatest  
favor woman ever did man. It is old-  
fashioned now, I know, but both of us  
are old enough to remember, are we  
not, when a gentleman showed his re-  
spect and homage to a lady by kissing  
her hand?"

Without a word she extended her  
poor, trembling little hand and he laid  
his lips reverently to her cold fingers.  
But she could keep in no longer, and  
the startled Major heard first a stifled  
sigh, then a moan and at last a great,  
cruel sob rose to her pale, quivering



lips and Miss Hetty had betrayed herself.

Major Doane staggered back and his face grew terribly white.

"I beg your forgiveness a thousand times, madam," he said at last, in a strange low voice; "I never dreamed until this instant—"

But Miss Hetty sat bolt upright in her high-backed chair, clutching the carved lion heads on its arms, and raised to him her poor, hurt eyes, wild with desperate appeal.

"Will you please go, Major Doane? And as for dreaming—you are mistaken; for there is nothing to dream." Then she arose from her deep chair, still holding the lion's heads till her nails bit into the hard polish, and said:

"And please tell—Kittie that Miss Hetty sends her—her blessing."

He closed the door behind him as gently as though there was some one dead in the little brown cottage.

The fire on the shallow grate had died to a low, even glow when Miss Hetty finally stirred from the high-backed chair and took from its place the dear little painting of the dead owner of the house which now sheltered her. Propping it up on the low table in front of her, she set the violets beneath, and then knelt down before it, bending her tired little head to her quivering hands. The last ember on the fire turned black, the light in the rosy-shaded lamp burned lower and lower, and finally flickered out. The servants up at the big house felt no apprehension at the non-appearance of their mistress, as she had told them she would spend the night with a friend further down the block. The hours crept on, the storm racked the little brown cottage, and dawn revealed the crooked old steps drifted high with snow.

They found her that morning, with the dim light falling icily on her tiny gray face. Just above was the canvas with the other dead eyes and lips, but there was no gleam like the morning glories in the sweet, pathetic, fragrant loneliness of the violet on which the silent woman's weary cheek rested.—Chicago News.

## DOMESTIC ECONOMY.

### Domestic Hints.

**EGGNOG.**—Separate the yolk of one egg from the white and beat very light. Add to the yolk a glass of cold milk, a tablespoon of sugar, a little grated nutmeg, and vanilla to taste. Add the beaten white of the egg and stir as little as possible.

**ESCALLOPED CHICKEN.**—Melt together one tablespoon butter and one tablespoon flour and add to one pint of milk; boil till thickened, season. Have one pint of chopped chicken in a well-buttered earthen dish and pour the sauce over it. If desired, one tablespoon of chopped parsley may be added. Bake until brown in a very hot oven.

**CURRIED RICE CROQUETTES.**—Put three-quarters of a cup of milk in a saucepan with butter the size of an egg, let it come to a boil, and stir into it one large cup and a half of rice that has been boiled in salted water twenty minutes. Add a slightly heating teaspoonful of curry powder, a few drops of onion juice, and salt to taste. When it comes to a boil add a beaten egg to it, stir a minute and remove from the fire. Turn it out, let it cool, and then form into cylinders and fry as usual.

**BEEF OMELET.**—Chop one pound of raw beef very fine; roll three crackers to a dust and mix with them one-half a teaspoonful of baking powder. Add two well-beaten eggs and mix all together thoroughly with a seasoning of salt, pepper and powdered herbs. Put a lump of butter in a baking dish, let it melt and then put in the mixture; let it bake one-half an hour. Turn out on a very hot platter, fold over as you would an omelet, and pour any kind of a meat sauce around it.

**GRAHAM PUDDING.**—Two cups of graham flour, one cup of milk, one cup of Porto Rico molasses, one cup of raisins stoned and slightly chopped, one egg, one even teaspoonful of soda, one tea-

spoonful of ground cinnamon, one-half teaspoonful of cloves, a little nutmeg if liked, and a small pinch of salt. Flour the raisins with a little white flour, mix all the ingredients thoroughly together, butter a mould and steam three hours. Serve with a sauce. If there should be any of the pudding left over, it can be used by cutting in slices half an inch thick, each piece dipped in milk, in which an egg has been stirred, fried brown in a little butter, and served hot with a sauce.

### Hints to Housekeepers.

**Bran tea,** made in the proportion of a pint of bran to three quarts of water, is used by many vegetarians as a foundation for soup. Butter should be used generously with it.

**Butter scotch** is made by boiling together two cupfuls of sugar, one-half cupful of butter and one-half cupful of water. Test in cold water and when it hardens the candy is ready to be removed from the fire.

**Quick cooking** and a very little water are the secrets of good cranberry sauce. A small cupful of water to a quart of the berries is sufficient, and ten minutes should cook the fruit enough. Beyond that its bitter flavor is developed. Add the sugar just as the sauce is taken from the stove.

**To Steam Apples.**—Pare and core some good cooking apples, place them in an earthen or granite ware dish that fits in a steamer. Have water boiling in the steamer, set the dish over it, stretch a towel over the top, put on the cover and fold the ends of the towel over it. Steam the apples until tender—about twenty minutes. Take the apples out, measure the juice in the pan, and add to it an equal quantity of sugar, flavor with a little lemon juice, cook until thick, put the apples in a glass dish and pour the syrup over them. It will be a jelly when cold. Serve with cream.

See that your plants get fresh air whenever it can be given them safely. This means that cold air should be so admitted that it is mixed with the air of the room before it reaches the plants themselves. Give your plants the benefit of light and sunshine if you wish them to do well. Water only when the surface of the soil looks dry. This rule cannot be deviated from with safety by the amateur. The experienced gardener will frequently discover conditions which make it safe for him to vary or modify it, but these the amateur will not discover, and it is not possible to lay down any instructions by which they may be discovered. Over watering does untold harm, as it causes souring of the soil, and brings on decay of the roots. Apply fertilizers only when a plant is growing, for then, and then only, can it make use of them. Begin with a small quantity of whatever fertilizer you use and increase the amount as the plant increases in growth, being careful not to overdo the matter.

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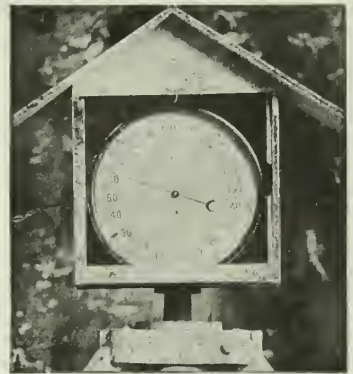
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## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, March 5, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday.....	75 3/4 @ 76 1/4	75 3/4 @ 77
Thursday.....	77 1/4 @ 78 1/4	77 1/4 @ 78 1/4
Friday.....	76 1/4 @ 77	76 1/4 @ 77 1/4
Saturday.....	77 @ 78 1/4	77 @ 78 1/4
Monday.....	76 1/4 @ 77	77 @ 78 1/4
Tuesday.....	75 3/4 @ 76 1/4	— @ —

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday.....	42 1/4 @ 43 1/4	34 1/4 @ 36 1/4
Thursday.....	43 1/4 @ 44 1/4	36 1/4 @ 38 1/4
Friday.....	43 1/4 @ 44 1/4	36 @ 38 1/4
Saturday.....	46 1/4 @ 47 1/4	37 1/4 @ 38 1/4
Monday.....	45 1/4 @ 46 1/4	35 1/4 @ 36 1/4
Tuesday.....	— @ —	— @ —

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 11 1/4 @ 11 1/2	1 08 1/4 @ 1 08 3/4
Friday.....	1 11 1/4 @ 11 1/2	1 08 1/4 @ 1 09
Saturday.....	1 12 1/4 @ 11 1/2	1 09 1/4 @ 1 08 3/4
Monday.....	1 11 1/4 @ 11 1/2	1 08 1/4 @ —
Tuesday.....	1 12 @ —	1 09 @ —
Wednesday.....	1 12 1/4 @ 11 1/2	1 09 1/4 @ 1 09

## WHEAT.

Since last review more rain has fallen, the State receiving one of the heaviest drenchings on record. While some damage resulted from last storm in overflows and blow-downs, the benefit was immense and greatly overbalances the harm done. The crop prospects for the State as a whole are now quite favorable for this date. Considering the improved outlook, the inclement weather part of the week, accompanied with the usual desire to avoid the tax collector by crowding out wheat as rapidly as possible just prior to first Monday in March, ruling values for wheat have been much better maintained than has been generally the case previously under similar conditions. The wheat clearances from this port in February aggregated twenty-three full or part cargoes, footing up, with minor shipments, 643,000 tons, representing a value of \$1,419,000. Of the twenty-three clearances above named, all but one were for Great Britain. The single exception was a mixed cargo of wheat and rye for Belgium. In February of last year there were only sixteen wheat clearances from this port, the total for that month being 560,000 tons, with a value of \$1,123,000.

California Milling.....	1 12 1/4 @ 1 15
Cal. No. 1 shipping, alongside.....	1 10 @ 1 11 1/4
Oregon Valley.....	1 10 @ 1 12 1/4
Washington Blue Stem.....	1 10 @ 1 15
Washington Club.....	1 07 1/4 @ 1 10
Or qualities wheat.....	1 05 @ 1 07 1/4

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	s—d @ s—d	s—d @ s—d
Freight rates.....	37 1/4 @ 38 1/4	25 @ —
Local market.....	96 1/4 @ 98 1/4	1 10 @ 1 11 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week are as follows for the options named:

May, 1902, delivery, \$1.11 @ 1.12 1/4.
December, 1902, delivery, \$1.08 1/4 @ 1.09 1/4.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.09 1/4 @ 1.09; May, 1902, \$1.12 1/4 @ 1.12 1/4.

## LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on March 1st and Feb. 1st:

Tons—	Feb. 1st.	Mar. 1st.
Wheat.....	115,991	*80,740
Barley.....	35,105	†21,385
Oats.....	8,390	7,353
Corn.....	663	831

\*Including 44,545 tons at Port Costa, 35,670 tons at Stockton.

†Including 13,415 tons at Port Costa, 5,588 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 35,251 tons for the month of February. A year ago there were 112,805 tons wheat in Call Board warehouses.

## FLOUR.

While there are evidences of a little more doing on local account than for some time preceding, the market is by no means active. Prices continue at a comparatively low range, considering present cost of milling wheat. The outward move-

ment of flour is of fair average proportions, but most of the export trade is in the way of contracts previously entered into and does not represent much spot business.

Superfine, lower grades.....	2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 2 25
Washington, Bakers' extra.....	2 90 @ 2 40

## BARLEY.

Business in this cereal has not been of very large volume since last review, but offerings were not particularly heavy of either high grade barley or feed descriptions. Some shipments are being made per steamer to Australia, but beyond this the outward movement at present is light. Shipments to Australia last month were 4700 tons. Only one barley clearance was effected in February for Great Britain or Europe, against three cargoes for corresponding month last year. While the market has not shown any great firmness, quotable values are above the figures of preceding week. The somewhat limited quantities offering would seem to indicate that present stocks in the hands of growers are of only moderate proportions for this time of year. That values will go materially lower is not probable, as barley is now cheaper than most other cereals.

Feed, No. 1 to choice.....	90 @ 92 1/4
Feed, fair to good.....	87 1/4 @ 90
Brewing, No. 1 to choice.....	95 @ 97 1/4
Chevalier, No. 1 to choice.....	1 05 @ 1 15
Chevalier, poor to fair.....	90 @ 1 00

## OATS.

The general conditions of the market, as also quotable values, have remained substantially the same as for some weeks preceding. Arrivals are of light volume from all quarters, indicating that there is not much to come forward. Spot supplies are largely in second hands, and while more than sufficient for the immediate inquiry, with anything like normal demand during the balance of the season, all the oats in sight will likely be absorbed.

White Oats, fancy feed.....	1 40 @ 1 42 1/4
White, good to choice.....	1 32 1/4 @ 1 40
White, poor to fair.....	1 25 @ 1 30
Gray, common to choice.....	1 30 @ 1 40
Milling.....	1 37 1/4 @ 1 42 1/4
Surprise, good to choice.....	1 40 @ 1 45
Black Russian.....	1 15 @ 1 32 1/4
Red.....	1 22 1/4 @ 1 40

## CORN.

Not much doing and not much stock to operate upon. Values continue to be maintained at a high range, and that there will be any material changes in favor of the buying interest during the balance of the current season is not likely.

Large White, good to choice.....	1 35 @ 1 45
Large Yellow.....	1 35 @ 1 45
Small Yellow.....	1 50 @ 1 60

## RYE.

Another shipment has been made to Belgium, being the second clearance this season. The British ship Balmoral, sailing this week for Antwerp, took as part cargo 2200 tons rye, valued at \$41,300. Market is moderately firm at current quotations, there not being much selling pressure at this date.

Good to choice.....	87 1/4 @ 92 1/4
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## BUCKWHEAT.

There have been no recent wholesale transfers reported. Millers appear to be well supplied for the time being. Quotable values remain as last noted, but in the absence of transactions are largely nominal.

Good to choice.....	1 55 @ 1 70
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## BEANS.

The same inactive condition has prevailed in the bean market since last review as for several weeks preceding. Lack of noteworthy strength in Eastern centers, combined with heavy rains throughout the State, imparted a tone of weakness, but in the absence of any selling pressure, values were without pronounced change. To realize promptly at this date, concessions would likely have to be granted buyers, especially on Large Whites or Lady Washingtons, Bayos and Pinks, immediate offerings being largely of these descriptions. Holders as a rule, however, prefer carrying rather than grant material concessions to effect prompt transfers.

Pea, fair to good, 100 lbs.....	3 50 @ 4 00
Small White, good to choice.....	3 00 @ 3 25
Lady Washington.....	2 65 @ 2 90
Pinks.....	1 90 @ 2 15
Bayos, good to choice.....	2 35 @ 2 50
Reds.....	2 50 @ 3 00
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	4 50 @ 4 60
Black-eye Beans.....	3 50 @ 3 75
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

## DRIED PEAS.

There is so little doing in Dried Peas of any sort that quotable values for the time

being are largely nominal. Green or Blue Peas continue in heavier supply than Niles, and in consequence custom just now is more readily secured for the latter sort.

Green Peas, California.....	1 50 @ 2 00
Niles Peas.....	1 75 @ 1 80

## WOOL.

In about a fortnight it is likely Spring Wools will be on hand in sufficient quantity to enable naming quotations for the same. Figures given below are based on latest transactions in last year's wool. There is very little stock of grease wool of any description now remaining. As the coming clip will be landed on a bare market, with dealers eager to take hold, the conditions could not well be more favorable for the producing interest.

## SPRING.

Southern, defective, 7 mos.....	7 @ 8
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	10 @ 12

## FALL.

Humboldt and Mendocino.....	11 @ 12
Northern Mountain, free.....	9 @ 10
Northern Mountain defective.....	8 @ 9
Middle Counties.....	8 @ 10
San Joaquin and Plains.....	6 1/2 @ 8 1/4
San Joaquin Lambs.....	7 1/4 @ 9

## HOPS.

The market is quoted strong, but business in this center is largely of a jobbing character, leaving little or nothing upon which to base wholesale quotations. Local dealers are quoting up to 17 1/2c, and it would be gratifying to be able to report transfers from first hands at the price named, but there is no evidence of that figure or anything near thereto being obtainable in a wholesale way. Recent mail advices from New York quote the situation there as follows: "Our local market has ruled very quiet throughout the week. Trucking in the streets has been so heavy on account of the snow that the deliveries to brewers have been small, and there has not been much disposition on the part of buyers to engage in new business. But, in spite of the limited movement, there has been a stronger holding of stock, and the few transactions were at some advance over previous quotations. Up to 17 1/2 @ 18c has been paid by brewers on usual terms for very choice lots of '91 hops, and it was intimated that 17c could be obtained from dealers for some of the favorite growths that are held here. The under grades have moved upward a little in sympathy with the best, and the firmness extends to the old hops as well. New York State has been pretty well snow bound, and no one has attempted to do much in the interior. Both mail and telegraphic advices from the Pacific coast are firmer; sales reported at 13 @ 13 1/2c, and one fancy lot of Washington is said to have been taken to fill a contract at 15c. We are advised that there are only about 600 bales left in the Sonoma district, and stocks are light in all other sections on the coast."

## HAY AND STRAW.

Further stormy weather during a portion of the current week has interfered considerably with the movement of hay and straw. While the tendency of the market has been in favor of the buyer, no noteworthy reductions in quotations were warranted, nor is it generally anticipated that any decided weakness will be developed in consequence of the very favorable crop conditions during past fortnight.

Wheat, good to choice.....	10 00 @ 13 00
Wheat and Oat.....	10 00 @ 12 50
Tame Oat.....	8 50 @ 11 00
Wild Oat.....	8 00 @ 10 50
Barley and Oat.....	8 00 @ 10 50
Alfalfa.....	9 00 @ 11 00
Volunteer.....	6 50 @ 9 00
Compressed.....	10 00 @ 13 50
Straw, 3/4 bale.....	40 @ 60

## MILLSTUFFS.

There have been no very radical declines in quotable values for mill offal since last review, but the market lacks firmness and any changes in the near future are more apt to be to easier than to firmer figures. Rolled Barley ruled fairly steady. Prices for Milled Corn continued at a high range.

Bran, 1/2 ton.....	16 00 @ 17 00
Middlings.....	18 00 @ 20 00
Shorts, Oregon.....	16 50 @ 17 50
Barley, Rolled.....	19 50 @ 20 50
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

## SEEDS.

Alfalfa is being more firmly held, with fair inquiry for this rather late date and stocks not especially heavy. Mustard is in too light supply to admit of wholesale quotations. Very little Flaxseed now arriving; no change to record in quotable values. The little business doing in Bird Seed is at virtually the same figures current for some weeks past.

Alfalfa, Cal.....	10 00 @ 10 50
Alfalfa, Utah.....	11 00 @ —
Flax.....	2 40 @ 2 60

Mustard, Yellow.....	— @ —
Mustard, Trieste.....	— @ —
Canary.....	3 1/4 @ 3 1/4
Rape.....	1 1/4 @ 2 1/4
Hemp.....	3 1/4 @ 3 1/4

## BAGS AND BAGGING.

Quotable values for Grain Bags remain as before noted, and it is not likely that any special efforts will be made to advance prices until within a few weeks of harvest time. Wool Sacks are offering at unchanged rates, with no heavy inquiry, but improved demand is looked for in the near future.

Calcutta Grain Bags, buyer June-July.....	6 @ 6 1/4
Calcutta Grain Bags, spot.....	6 @ —
San Francisco Grain Bags, 22x36, spot.....	6 @ —
San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	3 1/2 @ 3 3/4
Wool Sacks, 3 1/2 lbs.....	3 1/2 @ 3 3/4
Fleece Twine.....	8 1/2 @ —
Gunnies.....	— @ —
Bean Bags.....	5 1/4 @ 5 1/2
Fruit Sacks, cotton, three sizes.....	5 1/4, 6, 6 1/4
Fruit Sacks, Jute.....	7 @ 7 1/4

## HIDES, PELTS AND TALLOW.

The Hide market is quiet, but for choice stock is moderately firm at current rates. Pelts are selling at about the same figures as last quoted, with the future of the market a little more promising than a few weeks ago. Tallow is in fairly active request, and former prices continue to be maintained.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @ —	9 @ —
Medium Steers, 48 to 56 lbs.....	10 @ —	8 @ —
Light Steers, under 48 lbs.....	8 1/2 @ —	7 1/2 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	8 @ —
Light Cow Hides, under 50 lbs.....	8 1/2 @ —	7 1/2 @ —
Stags.....	6 @ 7	— @ —
Wet Salted Kip.....	9 @ —	8 @ —
Wet Salted Veal.....	9 @ —	8 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ —	14 @ —
Dry Kip and Veal, 11 to 16 lbs.....	14 @ —	12 @ —
Dry Calf, under 4 lbs.....	18 @ —	15 @ —
Salted Horse Hides, large.....	2 75 @ —	3 00 @ —
Salted Horse Hides, medium.....	2 25 @ —	2 50 @ —
Salted Horse Hides, small.....	1 50 @ —	2 00 @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, small.....	1 25 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 1/2 skin.....	80 @ —	120 @ —
Pelts, medium wool, 1/2 skin.....	65 @ —	75 @ —
Pelts, short wool, 1/2 skin.....	40 @ —	60 @ —
Pelts, shearing, 1/2 skin.....	15 @ —	30 @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good winter.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/4 @ —	— @ —
Tallow, No. 2.....	4 1/4 @ —	— @ —
Goat Skins, perfect.....	30 @ —	37 1/2 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

## HONEY.

The prospects for coming crop have been materially improved by the recent rains, and there is in consequence an easier tone to the market. Spot stocks and offerings of both Comb and Extracted are of small volume, however, and quotable values remain virtually as before noted.

Extracted, White Liquid.....	5 1/4 @ 6
Extracted, Light Amber.....	4 1/4 @ 5
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	11 @ 12 1/4
Amber Comb.....	8 @ 10
Dark Comb.....	6 @ 7

## BEESWAX.

Moderate quantities are moving outward, and more would be forwarded if supplies were readily obtainable. Prevailing values are being well maintained.

Good to choice, light, 1/2 lb.....	26 @ 28
Dark.....	24 @ 25

## LIVE STOCK AND MEATS.

Offerings of prime to choice Beef are not excessive and market is firm at the quotations, although immediate demand is not very brisk. Mutton is without radical change, but tends in sellers' favor, current values being well sustained. Spring Lamb continues to arrive sparingly and sells at advantage. Veal of desirable quality meets as a rule with prompt custom at full current figures. Hogs brought about same prices as last quoted, but tendency was to an easier market.

Beef, first quality, dressed, net 1/2 lb.....	7 @ 7 1/4
Beef, second quality.....	7 @ —
Beef, third quality.....	6 @ 6 1/4
Mutton—ewes, 7 @ 7 1/4; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 125 to 200 lbs.....	6 @ 6 1/4
Hogs, small, fat.....	6 @ 6 1/4
Hogs, large, hard, over 200 lbs.....	5 1/2 @ 5 3/4
Hogs, soft or acorn fed.....	5 @ —
Hogs, country dressed.....	6 1/2 @ 7
Veal, small, 1/2 lb.....	8 @ 9 1/4
Veal, large, 1/2 lb.....	8 @ 8 1/4
Lamb, spring, 1/2 lb.....	14 @ —

## POULTRY.

The market was very lightly stocked most of the week with both home product and imported, but more especially the former. While there was a good demand,



It was mainly for choice young stock, and only for this kind did market incline in favor of the selling interest. Fryers and Large Broilers in fine condition were especially salable to advantage, commanding in some instances still higher figures than the extreme quotations below noted. Old Roosters continued in poor favor. Hens bad to be large and fat to command special attention.

Turkeys, dressed, choice.....	16	@ 18
Turkeys, alive, Hens, # lb.....	15	@ 16
Turkeys, alive, Gobblers, # lb.....	13	@ 14
Hens, California, # dozen.....	4 50	@ 5 50
Roosters, old.....	4 00	@ 4 50
Roosters, young (full-grown).....	6 50	@ 7 50
Fryers.....	5 50	@ 6 50
Broilers, large.....	5 00	@ 5 50
Broilers, small to medium.....	4 00	@ 4 50
Ducks, old, # dozen.....	4 50	@ 5 50
Ducks, young, # dozen.....	6 00	@ 7 50
Geese, # pair.....	1 50	@ 1 75
Goslings, # pair.....	2 25	@ 2 50
Pigeons, old, # dozen.....	1 50	@ —
Pigeons, young.....	2 75	@ 3 00

## BUTTER.

There has been no opportunity for stocks to accumulate, the demand being sufficient to promptly absorb all offerings. Market has ruled decidedly firm, with sales in not a few instances at higher figures than justified as regular wholesale quotations.

Creamery, extras, # lb.....	29	@ 30
Creamery, firsts.....	28	@ 29
Creamery, seconds.....	27	@ 28
Dairy, select.....	28	@ 29
Dairy, firsts.....	26	@ 27
Dairy, seconds.....	24	@ 25
Mixed store.....	16	@ —
Creamery in tubs.....	—	@ —
Picked Roll, # lb.....	—	@ —
Firkin, California, choice to select.....	—	@ —
Firkin, common to fair.....	—	@ —

## CHEESE.

Supplies of domestic product are not heavy of either old or new, but are sufficient for the immediate demand at full current rates, buyers not being disposed to take hold very freely.

California, fancy flat, new.....	11	@ 11½
California, good to choice.....	10½	@ 11
California, fair to good.....	10	@ 10½
California, "Young Americas".....	10	@ 12

## EGGS.

There have been further sharp declines in this market since last review, but more steadiness is looked for from this time forward until hot weather sets in or until the end of the packing season. Dealers have commenced storing, and a brisk inquiry on cold storage account is likely to be experienced during the next sixty days. Demand for shipment, however, is now very light.

California, select, large, white and fresh.....	15	@ —
California, select, irregular color & size.....	14	@ 14½
California, good to choice store.....	13	@ 14
California, common to fair store.....	—	@ —
Eastern, good to choice.....	—	@ —
Cold Storage.....	—	@ —

## VEGETABLES.

A noteworthy feature of the vegetable market was the arrival of 1176 boxes Mexican Tomatoes Monday per steamer Curacao. The same vessel brought about 100 boxes of Green Peppers. Both Tomatoes and Peppers were quotably lower in consequence of above receipts. Asparagus was in increased supply, but prices continued above touch of the average consumer. String Beans of choice quality commanded stiff figures. Rhubarb was in few hands and met with a firm market. Onions were in liberal supply, as compared with immediate demand, and prices inclined in favor of buyers.

Asparagus, # lb.....	10	@ 17½
Beans, String, # lb.....	7	@ 12½
Beans, Wax, # lb.....	—	@ —
Cabbage, choice garden, # 100 lbs.....	50	@ —
Cauliflower, # dozen.....	—	@ —
Cucumbers, Bay, # large box.....	—	@ —
Egg Plant, Los Angeles, # lb.....	15	@ 20
Garlic, # lb.....	2	@ 2½
Mushrooms, # lb.....	10	@ 20
Onions, Yellow Danver, # cental.....	1 50	@ 2 00
Peas, Sweet garden, # lb.....	4	@ 7
Peppers, Green, Los Angeles, # lb.....	12½	@ 17½
Peppers, Bell, # box.....	—	@ —
Rhubarb, # lb.....	8	@ 10
Squash, Marrowfat, # ton.....	8 00	@ 10 00
Summer Squash, # box.....	1 25	@ 1 75
Tomatoes, Los Angeles, # box.....	1 00	@ 1 50

## POTATOES.

The potato market showed no noteworthy improvement in the way of demand, except for seed stock. For the latter there was considerable inquiry, especially for Early Rose, sales of this variety being made in a small way up to \$1.80 per cental. On Burbank Seedlings the tendency was to a wider range of prices, owing to great difference in quality of offerings. Some very common Oregon Burbanks sold down to \$1 per cental, while select were quotable up to \$1.60. Last Oregon steamer brought 9300 sacks. It is said arrivals from the North will show decrease from this time forward until close of season. Sweets were in fairly liberal supply and market was not particularly firm.

River Burbanks in sacks, # cental.....	1 00	@ 1 25
Petaluma and Tomales Burbanks.....	1 25	@ 1 40
Oregon Burbanks.....	1 00	@ 1 60
River Reds.....	1 40	@ 1 50
Sweets, Merced, # cental.....	1 40	@ 1 50

## The Fruit Market.

## FRESH FRUITS.

Apples are in very limited receipt, present offerings including little other than cold storage stock. The quotable range of values continues about as previously noted, but for high-grade fruit the market is decidedly firm, some very select being held at an advance on utmost figures warranted as a quotation.

Apples, fancy, # 4-tier box.....	1 75	@ 2 00
Apples, good to choice, # 50-lb. box.....	1 00	@ 1 50
Apples, common to fair, # 50-lb. box.....	50	@ 75

## DRIED FRUITS.

Business in dried and evaporated fruits is of decidedly fair volume for this time of year, and especially is the movement of liberal proportions, considering the quite limited quantities of most kinds which have been lately offering. Dealers report that trade for January and February proved far above the average for those months, but that shipments eastward were mostly to small points, the handlers in the larger centers trading stocks with each other and thus avoiding making purchases here. Latest advices from the East, however, are to the effect that stocks are running decidedly low in the main centers of distribution, and that the large Eastern dealers will soon be compelled to resume purchases here. The outlook for an early clean-up of most varieties could not well be more favorable. Peaches are being inquired for on Eastern account. Of this fruit it is claimed there are only about 75, possibly 80, cars remaining, and 75% of the stock is in the hands of three firms. Apricots are in light supply and desirable qualities are being firmly held. Apples are being offered sparingly, and buyers find it necessary to pay full current figures. Pears are in too limited stock to admit of any extensive trading. Not much activity will be required to wipe out present holdings of Pitted Plums. Stocks of Prunes are of more liberal proportions than of any other fruit, and these are mostly of 1900 crop, the new Prunes being nearly all disposed of. Old remain quotable at 2¼@3c. for the four sizes, but new are held at 3¼@3½c. There is more doing in Prunes East than in the local market.

## EVAPORATED OR BLEACHED.

Apricots, Royal, choice, in sacks, # lb.....	9	@ 9½
Apricots, Moorpark.....	10	@ 12
Apples, in 50-lb boxes, rings, pressed, fancy.....	8¼	@ 8½
Apples, 50-lb boxes, rings, pressed, good to choice.....	7	@ 8
Nectarines, # lb.....	5½	@ 6½
Peaches, unpeeled, fancy.....	8	@ 9
Peaches, unpeeled, choice.....	6½	@ 7½
Peaches, peeled, in boxes.....	12	@ 14
Pears, halves, choice to fancy.....	7	@ 10
Plums, Red and Black, pitted.....	5½	@ 6½
Plums, White and Yellow.....	5½	@ 6½
Prunes, 4 sizes, in bags, 3¼@3½c; 50-60s, 4¼@4½c; 60-70s, 4@4¼c; 70-80s, 3¼@3½c; 80-90s, 3@3¼c; 90-100s, 3c@—; these figures for 1901 crop.		

## COMMON SUN-DRIED.

Apples, sliced.....	4	@ 5
Apples, quartered.....	5¼	@ 5½
Peaches, unpeeled.....	6	@ 6½
Pears, prime halves.....	5	@ 5½
Plums, unpitted, # lb.....	1¼	@ 2¼

## RAISINS.

Trade is slow, but supplies are of light proportions, and that it will be necessary to carry any stock of consequence into the coming season, especially of desirable qualities, is altogether improbable. In quotable values there are no changes to note.

Following are the prices for 1901 crop in carload lots:	
Loose Muscatis—	Per lb.
4-crown.....	6
3-crown.....	6
2-crown.....	5½
Seedless Muscatis.....	5½
Seedless Sultanas.....	5½
Thompson's Seedless.....	6½
Seeded—	
3-crown, 1-lb. carton.....	7¼ @ 8
2-crown, 1-lb. carton.....	6¼ @ 6½
London Layers, 20-lb. boxes—	
2-crown.....	—
3-crown.....	—

## CITRUS FRUITS.

There are fair supplies of Navel Oranges, but there are few of any other description. The Navel offering do not include many of select quality. Prices remain at about same range as last quoted, but the large sizes are being offered more freely as compared with the demand than are the smaller sizes at the lower prices. Seedlings are so scarce as to be hardly quotable and would probably bring an advance on the figures below named. Lemon market shows steadiness for best at previously quoted values, but is slow and weak for common and defective stock. Limes were in only moderate supply and were rather firmly held.



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Oranges—Navels, # box.....	1 25	@ 2 75
Mediterranean Sweets, per box.....	—	@ —
St. Michael.....	1 50	@ 2 00
Malta Blood.....	—	@ —
Tangerine, as to size of box.....	1 00	@ 2 00
Seedlings, # box.....	1 00	@ 1 50
Lemons—California, select, # box.....	2 25	@ 2 50
California, good to choice.....	1 50	@ 2 00
California, common to fair.....	75	@ 1 25
Grape Fruit, # box.....	1 25	@ 2 50
Limes—Mexican, # box.....	6 00	@ 7 00

## NUTS.

Little doing in this line, fully as much owing to limited offerings as to lack of active inquiry. Such transactions as are being effected in Almonds are in the main at full current values. There are few Walnuts remaining and for choice soft shell the market is against buyers. Peanuts are moving in a light way at generally unchanged values.

California Almonds, shelled.....	15	@ 18
California Almonds, paper shell, # lb.....	10	@ 13
California Almonds, soft shell.....	8	@ 10
California Almonds, hard shell.....	5	@ 6
Cal. White Walnuts, No. 1 soft shell.....	10	@ 11
Cal. White Walnuts, No. 2 soft shell.....	8	@ 9
Cal. White Walnuts, No. 1 hard shell.....	9	@ 10
Cal. White Walnuts, No. 2 hard shell.....	7	@ 8
Peanuts, California, fair to prime.....	4¼	@ 5¼
Peanuts, Eastern, band-picked.....	5¼	@ 6
Pine Nuts.....	5	@ 6

## WINE.

Much the same quiet condition prevails in the wine market as previously noted. The tax time has passed, however, and that can no longer be taken advantage of this year to depress prices. Quotable values for dry wines of 1901 vintage remain quotable at 22 @ 26c per gallon, wholesale, but top figure is more in accord with the view of sellers than with the bids of wholesale operators. It is claimed by dealers that Eastern demand is greatly restricted in consequence of the advanced figures recently established, and that in some sections cheaper and poorer wines from Eastern grapes are being made to take the place of the California product.

## Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	109,552	4,760,234
Wheat, centals.....	436,592	7,230,870
Barley, centals.....	60,988	5,071,755
Oats, centals.....	4,730	716,211
Corn, centals.....	3,025	79,493
Rye, centals.....	47,711	187,211
Beans, sacks.....	4,288	586,732
Potatoes, sacks.....	37,709	1,049,601
Onions, sacks.....	1,430	163,543
Hay, tons.....	900	103,871
Wool, bales.....	133	43,739
Hops, bales.....	492	8,232

## EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	58,668	3,447,498
Wheat, centals.....	404,687	6,669,670
Barley, centals.....	573	3,738,039
Oats, centals.....	4	2,207
Corn, centals.....	—	8,908
Beans, sacks.....	187	19,988
Hay, bales.....	—	11,844
Wool, pounds.....	—	545,331
Hops, pounds.....	545	470,962
Honey, cases.....	3	5,683
Potatoes, pack's.....	188	42,496

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## New Patents.

DEWEY, STRONG & Co.'s SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR WEEK ENDING FEBRUARY 18, 1902.

693,486.—RIDGE BREAKER—R. Baidridge, Covina, Cal.
693,791.—HOSE COUPLING—J. H. Brown, Junction, Ariz.
693,587.—INSUFFLATOR—Eugenia C. Campbell, S. F.
693,642.—SPEED GEAR—J. W. Cushing, S. F.
693,821.—GAME—P. F. De Ford, Pasadena, Cal.
693,890.—PUMP SAMPLER—W. G. Dodd, S. F.
693,504.—SAW SET, ETC.—A. B. Edmonds, Ridgefield, Wash.
693,505.—THRESHER—J. E. and F. L. Elder, Dayton, Wash.
693,816.—CASH REGISTER—H. Hahn, S. F.
693,709.—ORE SEPARATOR—J. C. Hoefler, Portland, Or.
693,606.—HERNIAL TRUSS—A. Hunter, S. F.
643,718.—PROJECTILE—L. Julig, S. F.
693,802.—HAIR PICKER—F. Naake, S. F.
693,737.—TRAVELING BAG—E. U. Phillips, Portland, Or.
693,740.—DOOR SECURER—E. P. Raether, San Diego, Cal.
693,742.—SHOE CLEANER—W. Richardson, Colfax, Cal.
693,669.—CIGAR WRAPPING MACHINE—J. J. Ryan, San Jose, Cal.
693,760.—BUTTER CUTTER—I. B. Waker, Etna, Cal.
693,768.—CAMERA—F. A. Wiggins, Saltm, Or.

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## FORESTRY.

## The Sierra Nevada Forest Reserves.

The part of the twenty-first annual report of the United States Geological Survey devoted to forest reserves, by Mr. Henry Gannett, geographer, now in press but not yet published, contains the reports on the Yosemite and Sonora quadrangles, by Mr. C. H. Fitch, and on the Markleeville, Pyramid Peak, Placerville, Dardanelles, Big Trees and Jackson quadrangles, by Mr. George B. Sudworth. The total area included in the examination, over 7600 square miles, is a famous part of California. It runs from the San Joaquin valley on the west eastward across the Sierra Nevada into the deserts of Nevada, forming a complete section of the great range of California, and including a part of the great gold belt or mother lode, groves of big Sequoia trees, the Yosemite National Park, and nearly the entire areas of the Stanislaus and Lake Tahoe forest reserves. The counties of El Dorado, Alpine, Amador, Calaveras, Stanislaus, Tuolumne and Mariposa are included, in whole or in part. The area slopes in a long swell from 500 feet above sea level at the western edge to nearly 14,000 feet near its eastern edge. Up to about 3000 feet the country is covered with chaparral, with scattered oaks and digger pines. At 3000 feet yellow and sugar pines appear, and the forest continues to over 8000 feet, forming a belt 40 to 50 miles wide on the slope of the range.

In the early California days the placer diggings in the Sonora quadrangle were thronged with miners and their camps. Gold is now sought for there in the quartz. These mines and mining towns need supplies. Hence much land, with or without irrigation, is utilized for agriculture and pasture, though it can hardly be classed as agricultural or pastoral land. Merced and Tuolumne rivers supply water for irrigation.

The Sonora quadrangle rises from 500 to 3000 feet above sea level, where the timber belt proper begins.

The Yosemite joins the Sonora quadrangle on the east and rises to 11,000 feet. This quadrangle is nearly all within the Yosemite National Park. Practically, there is neither farming nor pasturing in these park lands.

The timber of commercial value grows best between the altitudes of 4500 and 6500 feet. The principal timber trees are yellow pine, sugar pine and red fir. In some areas the stand of timber will run from 80,000 to 140,000 feet, board measure, to the acre. The usual range is from 5000 to 50,000 feet per acre.

The forest is open, with little underbrush. Three groves of big Sequoia trees are in the Yosemite quadrangle, the Merced, the Tuolumne and the Mariposa. Sequoias of all ages are to be found in the Mariposa grove, many of them thrifty trees measuring from 1 foot to over 30 feet in diameter and 300 feet high. Mr. Fitch thinks that, with continued and proper protection against fire, the Sequoias may be able to perpetuate themselves, but that reproduction is not now going on to any extent, and fires are not wholly guarded against. The famous Yosemite Park is illustrated in the nine plates attached to this report. The total stand of timber on these two quadrangles is 11,000,000,000 feet.

Roughly estimated, the territory examined by Mr. Sudworth amounts to 5116 square miles, or 3,270,000 acres. As in the Sonora and Yosemite quadrangles, the country slopes up from the San Joaquin valley, past valleys and canyon bottoms, from 5000 to 7000 feet above sea level, on to peaks that rise from 9000 to 10,400 feet high, and it incloses in its high ranges a few large and many small subalpine lakes. Deep river canyons traverse the country, carrying waters of the Rubicon, the American, the Cosumnes, the Mokelumne, the Calaveras and the Stanislaus rivers. Mr. Sudworth names some

seventeen principal towns of the region whose permanence depends on the mining interests. Gold mining is the principal industry, though there is some grazing, agriculture and lumbering.

Seventy-five or eighty per cent of this region is more or less wooded. A narrow belt of thinly stocked woodland oaks and digger pines runs up to about 2000 feet. A broader belt of open timber forest of yellow pine, incense cedar, red fir and sugar pine extends up to 6000 feet. A third belt of lodgepole pine, black hemlock, California red fir and white-bark pine runs up to the timber line at about 9500 feet. The commercial timber is found mainly in the middle belt and consists chiefly of yellow and sugar pines. Here the stand of timber ranges from 2000 up to 50,000 feet per acre. The total amount of timber estimated upon these quadrangles, including the two forest reserves, is nearly 14,500,000,000 feet, board measure.

Fires have prevailed in this territory since a very early period, and they are still frequent, widespread and destructive.

With regard to the Sequoias, Mr. Sudworth states that they grow on the west side of the Sierra at from 4600 to 8400 feet above sea level. Eleven isolated groves are found which extend about 260 miles southward from the southern border of Placer county. Two of these groves, the Calaveras and the Stanislaus or "South Calaveras," are included in the territory under consideration. The trunk of the big tree has an enormous swell at the ground. This swell is from 2 to 8 feet greater than the diameter at 6 feet from the ground. The length of clear stem varies from 100 to 180 feet. The trees in the Calaveras grove range from 9 to 19.5 feet in diameter 6 feet above the ground, and from 235 to 325 feet in height. There is no reproduction of the big trees in the Calaveras grove, and reproduction is found at only two points in the Stanislaus forest, where fallen timber has protected them. The seedlings are from 2 inches to 4 feet high, and the saplings are from 10 to 30 feet high. The stump of a Calaveras tree, cut down in 1853, measured 27 feet inside the bark, and the age of the tree is estimated as about 1300 years. Mr. John Muir states that a tree of similar diameter cut down in Kings river grove was 2200 years old. He mentions another tree of the same grove as being 4000 years old, and probably older, as all the rings could not be clearly counted. Probably none of the Calaveras or Stanislaus grove trees are older than this, and most likely the majority are under 2500 years.

Thirty plates illustrate the classification of the lands, the trees, lakes, canyons, etc., of the region. There are presented also as part of this general report a number of land classification maps made by various persons and representing the distribution of the surface into wooded, pasture and cultivated lands in various quadrangles in California, Oregon, Washington, Idaho, Wyoming and Alaska. The woodlands of Indian Territory have also been accurately mapped, and the reports of the subdivision surveyors have been compiled and prefaced by Mr. C. H. Fitch, and they are presented with a map and summary of the forest conditions of this region. The scattered information concerning the rate of the growth of forest trees has also been collated in tabular form and discussed by Mr. Gannett.

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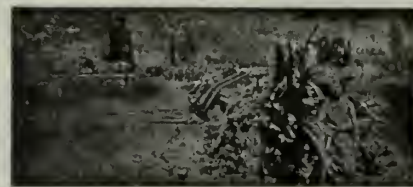
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## RANGE INTERESTS.

### Cattle in Oregon.

At a recent Farmers' Congress in Salem, Or., Dr. Withycombe, director of the Oregon Experiment Station, delivered an enthusiastic address on "Cattle Breeding in Oregon." He said in substance, as reported by the Oregon Agriculturist:

The magnitude of the live stock industry is known only to those who observe the statistical reports of the progress of this branch of agriculture. The live stock of the United States represents approximately four billion dollars, thus surpassing the products of the fields, forests and mines. We can truthfully say this industry is important to our national prosperity, and it is with pardonable pride that we point to the development of it within the past fifty years. There is, however, a gradual shrinkage in number of cattle as compared with the increase of our population, thus showing that the present values for this class of stock are more than likely to be maintained or even advanced.

Cattle growing in this State up to within a few years has been conducted in the easiest possible manner. Our ranges were replete with nutritious grasses, hence immense numbers of cattle grazed and became fat without any effort on the part of the stock grower. This condition of pioneer days is past, and to-day the farmer, in order to achieve success in this particular branch of husbandry, must adopt more up-to-date methods. With the immense area of land capable of producing large quantities of alfalfa, clover and other valuable forage crops, this State should become a great beef-producing center. Beef growing in the future will be largely confined to the small farms. Nothing will give greater stability, or contribute more to the substantial progress of agriculture than the general practice of the small farmer to annually fatten for the market a few head of live stock. This system of farming will insure a liberal return for labor employed and capital invested, while at the same time the farm will gradually grow richer and more productive. The wealth of this State rests in the intelligent development of its agricultural possibilities, and any system of farming which yields profitable returns and yet maintains or increases the fertility of the soil is a boon to mankind in general. We have outgrown pioneer conditions—the time when wheat and wool were exclusively the staple productions of the farm. These were the only commodities for which there was any demand; but now every class of farm product meets with ready sale. While cattle growing could not formerly be profitably pursued on the small farm, now, owing to the development of markets, the industry can be made profitable.

Perhaps the question will arise: Where shall we find a market for our cattle if the greater portion of our

farmers engage in the industry? To this we may answer we have the world for a market. Rapid transportation, refrigerator cars and ships have brought distant markets to our doors. Once develop the cattle-growing industry to the magnitude which our conditions will enable it to attain and you will witness packing houses open on every hand. Oregon is no longer an isolated section, but in reality is the center of the consuming population of the world. The markets in the Orient for our beef and other farm products will develop beyond the dreams of the most confident. The wealth that will come to the farmers of this State in consequence of these markets will soon transform the many dilapidated farms into beautiful rural homes. In addition to the direct income to our farmers, resulting from the sale of live stock and the output of our dairies, the return of the by-products to the land as a result of this system of farming will represent great indirect wealth to the agriculturalist. While we are proud of the showing made by the port of Portland with her shipment of 557,422 tons of wheat during the past year, we should not forget, however, that the nitrogen, potash and phosphoric acid in this amount of wheat represents a value of \$4,180,665. With stock growing, a very large proportion of this valuable plant food will be conserved to bless posterity.

### Professional Cattle Counters.

Few people know that this is a profession that only a very limited number of men are adepts at, writes Frank Benton, a Wyoming cattleman, who has bought largely of Arizona steers in years gone by, to the Omaha Drover's Journal. Now, some will wonder how counting range cattle is different from counting farmers' cattle. The difference is on account of the brands and because you have to count so much faster, as range cattle are wilder than farmers' cattle, and when you count them they are always going by you on the run, and you do not only have to count but also see the brand on every animal as it goes by. A few years ago banks and loan companies took a cattleman's word for the amount of cattle he had when he wanted to borrow money on them, but now they have professional cattle counters to go on the range and count them, and the more cattle one of these professional counters can tally in a day the higher his salary and the more demand there is for his services, both from the banker and the cattleman wanting the loan, as the expense is generally divided between the man getting the loan and the banker who employs the counter to protect his interests.

One of these professional cattle counters left South Omaha for Texas to count a large herd of cattle that a commission house had a loan on. He returned in five days, reporting that he had counted 17,000 head. These cattle were in the roughest mountains of Texas and scattered over pasture 100 miles square. The mortgage called for 17,050 cattle, but everybody was satisfied and everybody wanted the services of the cattle counter who made this record.

When asked how he did it, he said he "threw" them into windrows. This, then, was probably his secret of beating all former records, as it is a well known fact that several of the professional cattle counters in the employ of South Omaha banks and loan companies have only been able to count 5700 cattle on a range 100 miles square, where the party wanting a loan claimed 6000, and get back to Omaha in five days. They probably did not have the windrow system, but raked them into bunches.

It is very nice for the banker to know exactly how many cattle a man has who owes him a loan, and also a good thing for the cattleman to have his cattle counted once in a while, as a good many cattlemen are careless about counting their cattle when they are scattered all the way from Colorado to South Dakota and Montana.

This profession of counting range cattle is practically a new opening for bright young men who have tact and mathematics.

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### NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION, a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 309 California Street, San Francisco, at 10 o'clock A. M., Wednesday, the 9th day of April, 1902.

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Offers For Sale the following Well-bred Stallions:

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**FRAM 2:17** <sup>1</sup>/<sub>2</sub> Register No. 0479. By Direct 2:05 <sup>1</sup>/<sub>2</sub>, sire of Directly 2:03 <sup>1</sup>/<sub>4</sub> and 35 more in 2:30. Dam Silver Eye (dam of Raymon 2:17 <sup>1</sup>/<sub>4</sub>) by Abbottford 2:19 <sup>1</sup>/<sub>4</sub>.

**INFERNA 2:24** <sup>1</sup>/<sub>2</sub> Register No. 30838. By Direct 2:06, Sir Albert S. 2:08 <sup>1</sup>/<sub>4</sub>, Diodine 2:10 <sup>1</sup>/<sub>4</sub> and 15 more in 2:30. Dam Biscari by Director, 2:17, second dam Bicari (dam of 6 in 2:30 and 4 producing sons) by Harold.

**BEAU B. 2:16** <sup>1</sup>/<sub>2</sub> Register No. 33606. By Direct 2:05 <sup>1</sup>/<sub>2</sub>, Wildnut, sire of Wild Nutting 2:11 <sup>1</sup>/<sub>4</sub>, El Rami 2:14 and others. Dam Nettie Benton (dam of 4 in the list) by Gen. Benton.

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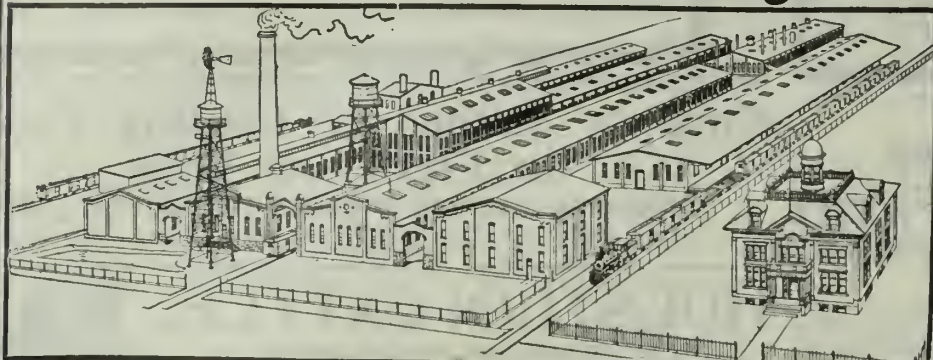
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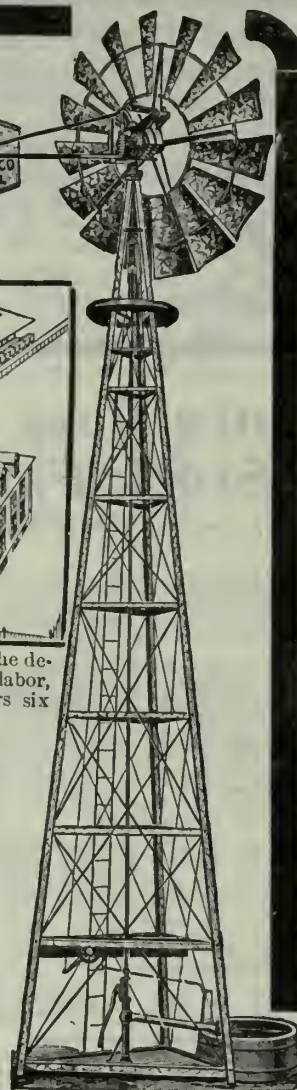
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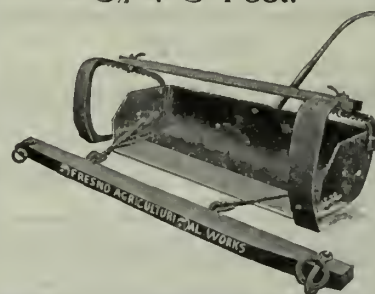
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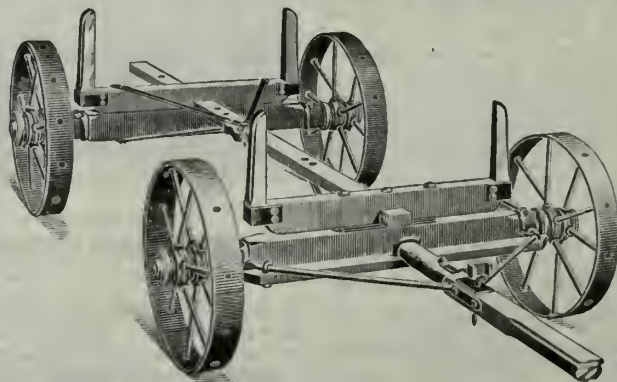
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# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. II.

SAN FRANCISCO, SATURDAY, MARCH 15, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

### Working Over Fruit Trees.

The orange tree has had its full share of attention in the matter of grafting or budding, by which it is furnished with a new top capable of bearing more satisfactory types of fruit than those which the planter expected to be satisfied with. All our fruit trees have, to a greater or less extent, been carried out of the old ways into the new in answer to the demand of market fashions or requirements, or to secure for the grower larger and more regular products. Grapevines have been led along the course, not alone for setting resistant roots, which is now commanding so much interest, but to change old roots to new lines of fruiting. Twenty years ago there was a considerable area of old Mission, Malvoise and other sorts, which lost caste with the wine maker, grafted over successfully, though the vines have since then gone out by the Anaheim, Santa Clara and phylloxera routes.

Hundreds of acres of almond roots have been made to yield prunes and peaches; black cherries have turned white; small prunes have been changed to large; shy apricots have given place to regular bearers; nearly all pears have run to Bartlett; nearly all the dozens of old peaches have disappeared and the few standards have multiplied; but, in the case of the peach, the axe and the spade have done far more than grafting tools.

The orange, too, during the last two decades has led a restless life because



Orange Buds in Pomelo, One Old Branch Left on Each Tree.

possibly. This course of procedure is still running high and is drawing under the budders' knife not only less fashionable oranges, but lemons out of place or



Method Inserting a Bud in Old Bark.



Orange Trees with Tops Removed After Buds Have Taken; Whitewashed Against Sunburn and Banded with Cotton Against Fuller's Beetle.

of the budders' spur upon its flanks. First it was the seedling against the full field of budded varieties, and every one chose his own favorite. More recently it has been the Washington Navel as a general favorite against seedlings and all other budded varieties, and all competitors left at the starting except perhaps the Valencia and St. Michael, which have made part of the first quarter

out of the growers' favor, pomelos out of profit, and there is now more working of old trees than ever before.

California has, we presume, done more in wholesale grafting over than any other fruit district in the world, for our growers have proceeded not by single trees or single acres, but by tens of acres. Naturally, new methods or modi-

fications of old methods have been freely originated. These have been fully discussed and illustrated in our columns. We have on another page of this issue a very satisfactory account of present practice with working over of citrus trees by Mr. J. W. Mills, foreman of the University substation, near Ontario, San Bernardino county, which is taken from an excellent bulletin on citrus fruit culture, which has just been published by the University.

The pictures on this page show the practices which Mr. Mill describes,



Orange Growth on Lemon Eighteen Months From Budding.



Orange Buds With Old Tops Left on to Protect From Frost the First Winter.



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E. J. WICKSON. Horticultural Editor

San Francisco, March 15, 1902.

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## The Week.

Favorable conditions have continued and multiplied since our last, and all parts of the State have been reached. There is the greatest activity in turning the improved affairs to the greatest account. Lands which it was feared might be dry all the year are being quickly seeded to get the greatest possible growth while the moisture holds. Cities and towns are greatly relieved from apprehension about their water supply, and irrigation reservoirs are looking better in some parts of the State than they have for several years past. Growth is starting freely under the favoring temperature, and with a few late showers everything promises to go through to a good harvest.

The central and upper parts of the State are now receiving their usual outflow from the winter resorts of the south. Trains and hotels are full and the city streets show the increased populations in all the popular towns. It is notable how quickly proper efforts to make places known by exhibit and publication bring returns. If a town or a district is asleep the visitors pass on as though disliking to disturb its rest, but lively towns and wideawake rural districts are quickly filled with visitors who haste to rejoice with the awakening local spirit and patriotism. The facts as we now see them should be accepted as a perfect demonstration of a modern industrial aspect to the old parable of the talents—to him that have shall be given. Burying talents in the earth is just as poor a use of them to-day as it ever was, and yet we see too many California communities inviting failure along just such lines.

Wheat is about the same and is firm at the current rates as the demand is good. Outward movement has, however, been rather light: only one cargo and one of flour for Europe, while parts of two other cargoes were flour, of which three-quarters went to China and one to Central and South America. Wheat futures are about the same as last week, though going higher they have sagged back to the old level. Spot barley is firm, but futures are lower. A ship is loading with barley for Australia. Oats are firm and corn steady. Rye is higher. It is reported that already the bag supply at the prison is covered with orders until September 15. We hope our friends took our advice and got under cover. Pink beans are in demand. Limas are a little easier because of the rains at the south. Alfalfa seed has advanced. Mustard is sold out. Millstuffs are weak and lower; rolled barley is higher. Hay is fairly steady, though there is an easy feeling and top prices have sagged toward the medium rates. Beef is firm and unchanged and mutton is higher; hogs are steady.

Butter is lower and is being borne down to packers' figures. Cheese is also sought for as an investment, while eggs are being packed actively and bought up in the country at prices above city quotations in some cases. Poultry is about the same as last week, having improved and run back in the interval. Potatoes are slightly firmer for choice. Seed potatoes have been sold up to \$1.80@1.90, but Victoria seed potatoes are coming in and selling lower. Onions are quiet; there is much sprouting and the market is weak for all not strictly sound. Fresh vegetables, like asparagus, peas, beans and mushrooms, are selling at a wide range and hard to quote. Apples out of cold storage are held a little higher. Oranges are in lighter stock and firmer. Lemons are unchanged and abundant, while limes are still high. Dried fruits are unchanged and trade is not active. Honey is easier and stocks less firmly held. Hops are only selling in a small way and new wool is still a week or so beyond sight.

We are glad to inform the host of our readers who are interested in the farther development of the practical in our California educational system that due progress is being made in the organization of the above named institution. In the PACIFIC RURAL PRESS of February 8th we gave an outline of the provisions of the law under which the establishment is to be made. The board of trustees met in San Luis Obispo at the end of last week and held an open meeting, at which all interested were invited to state their views as to the scope of the new school. Considerable difference of opinion was apparent at first, but afterwards all seemed to generally agree that under the law a practical school of rural handicrafts on an agricultural foundation was the end to be sought. In answer to invitation, about sixteen tenders of lands for the use of the school were received, and the trustees carefully looked them over and secured data upon which a selection will be made at the next meeting.

We are glad to know that the Haywards horse show, to which we gave warm preliminary commendation, was satisfactory. Despite the occasional heavy showers on the show day, March 8, the town was crowded with visitors and the show proved everything that had been promised. It was, in fact, so successful that it was decided to make it an annual affair. The review was divided into several classes, the horses of each class being grouped with respect to the line of work for which it was intended. There were horses from Oakland, Haywards, Pleasanton, Irvington, Livermore, Milpitas, Alvarado, Newark, Byron, Danville, San Ramon, Alameda, San Jose, Petaluma, California Jockey Club, Warm Springs, San Lorenzo, Castro Valley and Santa Cruz. There were no prizes given and no official opinion passed upon the relative merit of the stock displayed, but the educational value of the display was high, and the exhibit showed clearly that California still has good horses which have not been electrocuted or crushed by automobiles. It is a good thing to have that fact set forth.

The grain growers' combination is ready for the spring meeting, which will be held in Sacramento. All who have signed the articles for the proposed Grain Growers' Association are invited to assemble in Pythian Castle, Ninth and I streets, Sacramento, Tuesday, March 18, at 1:30 p. m. Though all will be welcome, it is to be a delegate convention, in which representation has been apportioned as follows, the numeral signifying the number of delegates in each case: Colusa 6, Glenn 5, Tehama 3, Butte 11, Yuba 2, Sutter 5, Placer 4, Yolo 4, Sacramento 4, Solano 2, Contra Costa 4, Stanislaus 8, Merced 6, Madera 6, San Joaquin 1. We do not know the basis of delegation, but presume it rests upon the number of signers in each county. Primaries for the selection of delegates will be held on Saturday, March 15, at 2 o'clock p. m., except in those counties where local organizations have already appointed delegates. The places for these primaries will be announced in each county by the local canvassers. This thing should not fail for lack of interest, which seems to be one of its greatest dangers.

To push our local products in the Orient, the great industrial exposition to be held at Osaka, Japan, March 1 to July 31, 1903, should not be overlooked. This suggestion is all the more pertinent from the

fact that the exposition will present a novel feature, to which the general attention of foreign manufacturers and the industrial world is called. This feature is the establishment of a special building for samples of articles produced or manufactured in foreign countries. It is not concealed that the primary object of this invitation is to afford Japanese manufacturers an opportunity to study the latest products of Western industries, with a view to the improvement of Japanese industries; but it is claimed that in return the establishment of the building in question offers to foreign producers a rare opportunity for exploiting the rapidly developing markets of the whole Far East, as the exposition is expected to attract immense crowds of visitors from the continental countries of Asia, in addition to the millions of Japanese. The Imperial Government proposes to exempt exhibits for the Sample Building from the operation of the customs tariff, provided the articles be re-exported within two months from the date upon which the exposition shall close. It will also negotiate for special freight facilities for all such exhibits.

We regret to see that California papers are building up visionary schemes of the success of cassava in this State, on the basis of an Eastern magazine article, which seems to have brought to these writers their first knowledge of the subject. One of our exchanges has this paragraph:

Assuming that these statements are substantially correct, the value of the crop to California, if it can be grown here, is easily seen. One of the special drawbacks of the great interior valleys is the practical impossibility of producing corn as a feed for hogs and cattle, whereby the stock industry is greatly restricted. If a crop can be found which will be an acceptable substitute for corn there is a hope of getting rid of the wheat and barley monopoly which is driving the Sacramento and San Joaquin valleys to bankruptcy, and possibly cassava may be the crop which will make California a rich cattle country. At least, alfalfa and cassava together might do it. The most serious question is whether cassava could withstand our long summer drouths anywhere except on irrigated lands.

Yes, it is a serious question, and why the writer did not ask the answer to it from some one who knows before indulging in the anticipations, we can not conceive. Cassava is not suited to Californian conditions. It has been amply tried, and it peters out in great shape wherever it can be induced to start the race at all. It is a plant suited to humid conditions, not alone of the soil, but of the air, and even where attempts have been made to grow it with irrigation they have failed because of the aerial requirements of the plant. We do not see how the growth of it, even if it succeeded, is related to the "wheat and barley monopoly." There is no monopoly to prevent a man from feeding off barley and turning it into pork. It is only when the grain approaches shipment that the monopoly gets a clutch upon it. If our contemporary had left the cassava entirely out of his proposition and had urged the larger production of stock on the barley and alfalfa combination he would have hit upon a balanced ration of the finest kind. If he had added Egyptian corn he would have mentioned a thing which would be new to many readers and which will grow magnificently. The public rightly objects to theoretical writers on agricultural subjects. They find very little of it nowadays in the agricultural papers. The general newspapers have jumped the claim, and some of the agriculture they present is fearfully and wonderfully made.

One of the most interesting things we saw last summer was the new life at Indio, which is below sea level, in the Colorado desert side of Riverside county. We found there a host of new settlers who proposed to make the desert blossom like the cantaloupe, and they were doing well at it. It is now announced by a Chicago firm of handlers of California fruits and vegetables that they expect to have 250 cars of Coachella cantaloupes ready for shipment May 20 to June 1. They also announce that they have made arrangements with the Southern Pacific Railroad to make up solid train loads of five cars each and run them as a second section to the regular overland passenger train. For a new settlement the Indio region is speedy. They grow the Rocky Ford melon and ripen it about a month earlier than Rocky Ford does. Their product goes to all the small places at the East, even to the refrigerators of the ocean steamships for their first table passengers. This is good business for Indio and for California.



# QUERIES AND REPLIES.

## Onions in Yakima Valley.

TO THE EDITOR:—I expect to plant about five acres of onions in the Yakima valley, Washington, in a volcanic ash soil; will have to irrigate. Please tell me through your paper what varieties would be the most profitable, both in yield and market onion. How much seed per acre and how would you plant—what distance apart? Is the Yakima valley a good fruit country, and what varieties would you advise setting in apples and cherries?—C. M. H., Chicago.

The light soil of which you speak is good for onions, if the moisture is kept about right by timely irrigation. On the whole, Yellow Globe Danvers has given best results for large scale growing, if you grow direct from field seeding. The Prizetaker gives good results by the later method of growing seedlings under cloth or glass, and transplanting when the young plants have stems about three-sixteenths of an inch diameter and a height of about 6 inches. You get a more uniform stand and more even-sized bulbs by transplanting, and it costs about the same to transplant as to weed and thin out seedlings grown in place. Grow in rows about 14 inches apart and the plants about 4 to 5 inches apart in the rows. It takes about four pounds of seed to the acre for field sowing, and about half as much if plants are grown under cover for transplanting. Irrigate in small furrows and cultivate well between the rows to save moisture. Full account of onion growing is given in our book, "California Vegetables in Field and Garden."

Very good apples are grown in the Yakima valley on proper soils and exposures. Nearly all the popular varieties seem to succeed. Cherries are not so satisfactory, and some growers commend only the Duke and Morello classes.

## Grafting Over Old Walnuts.

TO THE EDITOR:—I saw an article on walnut grafting in your paper of March 1. I have some black walnuts to graft to Santa Rosa soft shell. I should like to ask for more information. My trees are twenty-five years old and very tall and have all the lower limbs cut off. Can I graft in the main body of tree, and if so, at what distance from the ground?—E. F. LAUTEREN, Guerneville.

You can graft into the main trunk according to the method described for fig grafting in the PACIFIC RURAL PRESS of March 1, but it will require some attention to keep the large cut from checking and subsequently rotting, and the scions will always be in danger of blowing out or falling out by their own weight after they get size, because it is hard to get strong attachment to a large stump. You might put in four grafts and intertwine or lash them together as they grow, and in this way make them guard and support each other. We would much rather work into small limbs, even if we had to go pretty high to get them. This has been successfully done in grafting over black walnuts planted as roadside shade trees. Put the grafts on the top sides of the limbs so that the weight will pull the graft down upon the old stub and not away from it.

## Bermuda Grass.

TO THE EDITOR:—Do you think Bermuda grass would be a good grass to keep the soil from washing away on hillsides? Does it make good pasture feed?—A. CONSTANT READER, Newman.

Bermuda grass is the best thing we know of to keep hillsides or levee banks from washing, but Bermuda grass does not like dry hot soil very well and makes rather scant top growth, though the roots hold on well. On moist land, however, even with considerable alkali, Bermuda grass makes a good growth, and those who have it on such lands have most to say in its favor. It is not a winter grower except in frostless places. On moist rich lands Bermuda grows best, and as it is practically impossible to dislodge it the grass is on the whole more harm than good in this State.

## Beauty of Glazenwood.

TO THE EDITOR:—We have a California climbing rose brought from Pasadena a few years ago. It has bloomed in wonderful profusion in our greenhouse for the past three years. I have been trying to find out the history and origin of this magnificent rose, but without result, and apply to you for information. We received it under the name of "Gold of Ophir," and our exhibit of it last March at Horti-

cultural Hall, Boston, received a silver medal. I wish to show the rose at the exhibition of the Rose Society of America in New York this month, and I would like to have the name for that occasion.—E. L., Lenox, Mass.

The PACIFIC RURAL PRESS of April 27, 1901, gives an illustrated account of the rose which you have secured from California under the name of "Gold of Ophir." You will see that a more correct name is "Beauty of Glazenwood," but this last is probably a renaming, but will enable you to pursue the matter further in rose literature. Some have thought that it was really "Fortune's Yellow," but we believe that its exact nomenclature has never been demonstrated.

## Hard Shell Almonds.

TO THE EDITOR:—Now as the Jordan almond is (as stated) a hard shell almond, the kernel does not dry out and keeps better and sweeter. Soft shell almonds will not bear with me, but I have a seedling hard shell which bears every year and which I consider in every way a superior almond. I enclose you a sample of it. I believe that the greatest failure has been made in almonds, more so than with any other kind of tree. Have we all been wrong in planting soft shell?—A. KERZ, Ramona.

The Jordan almond is popular in part because of its shape. It is rather long and slender and adds this character to the quality of the kernel. It is not strictly hard shell, although harder than the soft shells, which we have so largely grown in California. A roundish hard shell like that you send would not take the place of the Jordan. It is possible that, since machinery has been devised for securing the kernels from the hard shell, and as there is a large demand for kernels for confectionery purposes, hard shell almonds may come to be more profitable. For table use, however, the soft shell almond, which yields readily to the fingers, or to a light pinch with the nut cracker, will always be popular.

## Killing Tree Ants.

TO THE EDITOR:—What are the best means of exterminating ants which give great trouble in a fruit garden which I am setting out near Cuicatlan, in the State of Oaxaca, southern Mexico. My trees were imported from the States, but the large ants, known locally as "arrieras," strip all foliage from the young trees and cause much trouble. I am informed by the American Consular Agent in one of the northern cities of Mexico that they have suffered a similar nuisance, and have used cyanide of potassa dissolved in water, which is poured into the ant holes. The same gentleman also informs me that in California a pump is used with which poisoned air (bisulphide of carbon) is pumped into the ant holes, which are then closed up.—W. MORCOM, Puebla, Mexico.

You can make short work of ants which dwell in holes in the ground by opening the hole a little at the surface, pouring in an ounce of carbon bisulphide and covering the hole. The vapor generated will find its way to all parts of the nest and kill everything. It is seldom necessary to use a pump, but there is a cheap injector sold by the manufacturers of the bisulphide which may be useful. In the ant hole, however, the pests are usually so collected in a small space that the vapor will reach them in its own diffusion. This treatment is most effective where the ground is moist. To kill ants coming from undiscovered holes the young trees should be sprayed with Paris green, one pound to 200 gallons of water. We never heard before of the other treatment mentioned.

## Vine Planting.

TO THE EDITOR:—What success could be had by putting out cuttings in place of rooted vines—say, in two weeks? I have been intending putting out, say, two in a place, Thompson Seedless. In case both grow, would it be necessary to remove one next year, or could the two stand side by side without injuring the other?—A. SUBSCRIBER, Tulare.

It is getting late for setting vine cuttings in the interior, and probably you would not get a very good stand, unless you wish to plant on rather moist soil. It would be better to root the cuttings in nursery, where they could be given water as needed, and plant out rooted vines next winter. You might try two cuttings in a place and have a better chance of a stand, but it is not desirable to allow them both to remain. One good vine in a place is well enough. Where two grow, use the extras to fill gaps with next winter.

## Warming and Smoking.

TO THE EDITOR:—In your issue of March 1st you published an article, "More About Frost Fighting," in which there was a brief description of a hot air blower used by Mr. L. F. Graham in San Jose. Could you give a more explicit description of this machine and its cost?—C. D. MAXFIELD, Lakeview.

A very satisfactory account of Mr. Graham's policy of frost fighting and the construction of his smoker may be found upon another page of this issue. In this account it will be noticed that it is chiefly smoke which he gets from his blower and he gets heat from oil pots.

# WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending March 10, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director

## SACRAMENTO VALLEY.

Cooler weather has prevailed during the week, with occasional light frosts in some places. Heavy rains have fallen in the valleys, causing another rapid rise of creeks and rivers, but no great damage has been reported. The mountains are covered with an abundance of snow. Farm and orchard work are still suspended, owing to the heavy condition of the soil. Grain is making good growth, and prospects for heavy crops were never better at this season. There is a large acreage of wheat and barley. Almonds in bloom were slightly injured by frost in some places, but no other damage was done. Deciduous fruits are generally somewhat backward but in good condition, and give indications of a heavy yield. Orange buds are forming.

## COAST AND BAY SECTIONS.

Cool weather has prevailed during the week, with frequent heavy rainfall in the central and northern counties and lighter rains in the south. At Santa Rosa the precipitation from March 1st to 8th has been 3 inches, making a total of 28 inches for the season. In some of the northern districts grain on the lowlands is reported rusty and in poor condition, but is looking well on the higherlands. In San Benito county grain and grass have made remarkable growth, and prospects for heavy crops could not be better. Pasturage is plentiful and stock are in good condition. Deciduous fruits are a little backward in some sections, but trees are in bloom in many places, and prospects good for heavy crops.

## SAN JOAQUIN VALLEY.

The weather has been slightly cooler than during the preceding week, and light frosts have occurred in many places. Rain has fallen at intervals in all parts of the valley. The soil is in excellent condition, and plowing and seeding are progressing rapidly. In the southern counties the grain acreage will be less than usual, owing to scarcity of rainfall early in the season, but a good yield is probable. The acreage in the central and northern counties is reported greater than last season's, and heavy crops are expected. Grain and grass are making good growth and looking well in all sections. Pasturage is abundant, and stock are in good condition. Orchards and vineyards continue thrifty and give indications of large crops. Early fruits in bloom have not been injured by frost.

## SOUTHERN CALIFORNIA.

The weather during the week has been cool and cloudy, with occasional fogs and light rains. The soil is in excellent condition, and plowing and seeding are in progress. Sugar beet planting has commenced in some places. Water in reservoirs is abundant. There is said to be a scarcity of snow in the mountains. Wheat, barley and hay are in excellent condition, and will make good crops if later rains come at the proper time. Pasturage is plentiful. Early deciduous fruits and berries are in bloom, and give indications of a good yield.

EUREKA SUMMARY.—The valley lands are too wet for plowing. Grass is doing well, but grain growing slowly; warm weather is much needed. Fruit trees not in bloom, except a few early peaches.

LOS ANGELES SUMMARY.—Sufficient rain for present needs has fallen. Warm, clear weather is required for crop growth and deciduous trees, which blooming late make outlook for deciduous fruits better than for several years.

## Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, March 12, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the Week	Minimum Temperature for the Week
Eureka.....	3.81	31.14	40.13	32.58	58	40
Red Bluff.....	1.66	27.78	22.17	19.57	68	38
Sacramento.....	.78	16.15	17.18	18.64	66	42
San Francisco.....	1.40	15.52	18.79	20.26	60	44
Fresno.....	.74	5.83	10.28	9.09	64	36
Independence.....	.05	4.04	5.81	5.89	54	30
San Luis Obispo.....	2.39	19.85	27.62	13.96	78	38
Los Angeles.....	1.06	9.37	14.10	13.87	70	40
San Diego.....	.55	4.64	8.66	6.94	64	46
Yuma.....	T	.48	3.60	2.86	76	40



## HORTICULTURE.

### Working Over Old Citrus Orchards.

From University Bulletin 133, by J. W. MILLS, foreman of University substation in Los Angeles county.

In every fruit district the introduction of inferior varieties necessarily causes much loss to growers, as it is expensive to replant or to work over old orchards. This is the price that horticulturists willingly pay for new and improved varieties. The orange growers of southern California have experimented with almost every known variety, and have been compelled to abandon a number that once were popular. The heaviest loss incurred was because of the inferior Australian Navel, which preceded the Washington Navel and sufficiently resembles it in growth to have been sold in numbers of cases for that far better variety. In recent years many trees of Australian Navel, Mediterranean Sweets and seedlings have been rebudded to the Washington Navel and its improved types.

While it is easy to perform the operation of budding, it requires special knowledge and skill to get the new tree top rightly started and through the first season. Even an old orange tree will take buds in the main branches or trunk, and will produce a luxuriant growth from the buds the first year, if properly managed. But if such trees lose their tops after the first summer's growth they are usually worthless, or are not profitable for years. In such cases it is better to take out the tree and plant young budded trees from the nursery.

**THE METHOD OF REBUDGING TREES.**—Old Mediterranean Sweets are among the most difficult of citrus trees to rebud, and very poor results will be obtained if they are handled by ordinary methods. E. L. Koethen and O. D. Wilheit of Riverside have been very successful in budding over all kinds of old citrus trees, including Mediterranean Sweets. They trim out all branches that are not used to insert buds into, and then thin out the remaining branches above where the buds are inserted. This is done early in the spring, and at the time of budding. The removal of surplus limbs directs the entire flow of sap into the branches containing the buds, which results in their healing over quickly and becoming well united. Upon the removal of the tops of the trees the buds start at once. All saw cuts are covered with some material that will exclude the air, usually grafting wax, though Mr. Koethen has experimented with thin putty, and finds it much cheaper, more durable and not injurious to the tree. After the tops are removed, the trees should be whitewashed to prevent sunburn.

**VALUE OF "CURED" BUDS.**—The best success comes from using "cured" buds; these are the buds that have been cut from the tree and kept in damp sand or moss for a few weeks before using. When treated in this way they become tougher, and when inserted into a tree that has any freely-flowing sap, they absorb it more readily. When buds are well cured, and not allowed to become either too wet or too dry, they are not easily injured in handling. The delicate germ is very brittle when the scion is first cut from the tree, and the slightest touch will sometimes destroy it.

**PLACING THE BUD.**—The incision which is to receive the bud is made by running the knife down the side of the branch or trunk of the tree. The crosscut is made at the lower end of the incision, instead of at the top, as is the usual method, and slants upward. By giving the knife a slight twist before removing it from the last cut, the two corners are turned out, which, with the upward slant, forms an opening, into which the bud slips easily. Narrow strips of waxed cloth are then wrapped around the limb, completely covering the inserted bud and the incisions. The insertion of the buds from below gives better protection from rain and dew.

**WHEN TO REMOVE THE BUDS.**—These waxed bands are allowed to remain on the buds for from four to six weeks, according to the weather. During such a season as the spring of 1901, which was cool and damp, citrus trees make very little growth. Under these circumstances the waxed bands should remain a longer time. The bands were removed from the buds after four weeks (the usual period) in a number of cases in the Pomona valley in 1901, and they generally died; but in the same year when the bands were allowed to remain on the buds for six weeks the result was satisfactory.

**REMOVAL OF THE TOPS.**—There are three usual methods of removing the tops after budding: (1) The removal of the entire top at the time of taking the bands from the buds; (2) the removal of all branches but one, which is left to draw sap; and (3) the girdling of the limbs above the buds while still retaining the entire top for one year.

When the first method (illustrated in large picture on first page) is practiced and proper protection is given to the buds and young top during the first year, better results seem to be obtained than by any other way. The new top receives the entire nourishment afforded by the tree; with frequent pinching-back of the new branches, the wood can be hardened

and better matured before winter, and the leaves become thick and heavy, affording much frost protection. But when this method is employed in frosty sections, the tops must be protected still further during the first winter. The young growth will be killed when the thermometer registers from 25° to 27° Fahr., and if the tops are killed back to the old wood, the trees will seldom or never become useful, often failing even to send out suckers.

The value of protection to the young top during the first winter was shown by a lemon orchard, in a frosty location, that was budded over to Washington Navel oranges. When the tops were removed, the growth from the buds was wrapped with palm leaves during the first winter; eighteen months after the trees were budded, they were past all danger from frost, and were large enough to produce a box of oranges per tree. (These trees are shown in a picture on the first page.)

Seedling orange trees that were budded over when sixteen years old, and were protected by nailing palm leaves to the trunks and by wrapping the palm leaves around the new tops, produced an average of eight boxes per tree during the first five years after they were so budded.

The second practice (as shown in the picture of worked-over pomelos) of leaving a side branch on the tree to "draw sap" is a safe method, and will sometimes save a tree if the buds fail to grow; but when budding is skillfully done there is no need of leaving side branches.

Girdling the branches above the buds after they have healed over and the bands have been removed, while leaving the tops on until after the first winter, is not practiced widely, but has some ardent advocates. The top when thus left continues to draw sap to keep alive, and to ripen a crop of early and poor fruit. The removal of such a top after the buds have made one year's growth is sometimes difficult without injuring the new head. The chief advantage for this method is that the old top forms a covering for the new head, obviating the necessity of wrapping it for protection against frost. Trees handled in this way have made a better record than adjoining trees that had the tops cut off at the time when the bands were removed from the buds and were left unprotected during the first winter.

When the leaves of fan palms are used the stems are tied around the trunks of the trees and the broad leaves are fastened around the tops. After spring frosts are over the palm leaves are removed. Sometimes the palm stems are nailed to the trunks of the orange trees, which is more convenient than tying. Though not a praiseworthy method, yet this does not seem to injure the trees.

The old time method of cutting off the entire top of a tree so as to bud upon suckers is now considered a poor way, as a year of time is thereby lost.

### Mr. Graham's Portable Smoker for Frost Prevention.

We alluded briefly recently to the discussion on frost prevention at the San Jose Farmers' Club, in which Mr. L. F. Graham mentioned a machine which he had in use for smudging. Mr. Graham has given the San Jose Herald a fuller account of his operations, which will be useful to many of our readers who are preparing to fight frost on their deciduous fruit trees and vines.

**THE EXPERIMENTS.**—We have gone upon the theory as advanced by Mr. Alexander McAdie, Forecast Official of San Francisco, that the damage was caused primarily by cold, stagnant air, and secondly by the rapid warming of the fruit at sunrise. In order to raise the temperature, and at the same time to create a certain movement of the air, we experimented largely with small fires, and found after numberless failures that an ordinary five-gallon can cut in two in the middle, in which we placed about two gallons of crude petroleum, gave the best results.

In order to get an accurate idea of the heating power of one of these, we placed one in a building containing 6336 cubic feet and succeeded in raising the temperature therein 14° in three-quarters of an hour. Of course, this would not have the same efficiency in the open air. However, if we can succeed in raising the temperature 2° or 3°, that alone will frequently save the crop. We found that on a cold, still morning two gallons of oil will burn for two hours.

**A GREAT SMOKER.**—The object of the smudging machine mentioned, which I will now describe, is not to raise the temperature, but to create a blanket of smoke that would settle over the trees and prevent a too rapid radiation of the heat from the action of the rays of the rising sun.

In the machine mentioned we used a 110-gallon benzine tank, one end of which was entirely removed. On the side near the other end an opening was made, over which a door was fitted, through which a fire can be made inside the tank. About 1 foot to 18 inches above the bottom was placed a grating. Underneath the bottom of the tank was placed a small blower, the same as used in the blacksmith's forge.

Power for driving the blower is taken from the

wagon wheel by the use of sprocket wheels and chain. Every farmer is familiar with this apparatus, as it is largely used in seed sowers. A large sprocket wheel is attached to the rear of the wagon wheel, and connected by a sprocket chain to a small sprocket wheel on a countershaft, and on this countershaft is a pulley from 18 to 20 inches in diameter, with a 2-inch face. From this pulley we belt direct to the small pulley on the blower, which will give us from 1300 to 1500 revolutions per minute. By making and keeping up a hot fire of wood, on which is spread a very liberal quantity of tar, a very hot fire and one that makes a dense smoke is created. On the top of the grating we placed a liberal supply of straw trash, or stable manure, which is kept thoroughly wet by sprinkling. The intense heat created by the fire underneath evaporates a large amount of water, and a tremendous steam is forced out in combination with the smoke. The effect of this steam is that, as it is carried through the orchard, a certain amount is condensed upon the chilled fruit, and this, together with the screen of smoke that hangs over the trees, prevents the too rapid warming of the fruit.

**THE SMALL FIRES.**—Now, in recapitulation, you will gather from what I have just said, the small fires that are placed through the orchard (from thirty to fifty to the acre) is what is intended for the raising of the temperature and for the prevention of the cold air, and the smudging machine is for the purpose of screening and protecting the tender fruit from the rays of the rising sun. The small fires will want to be started early in the night, or at any time when the thermometer reaches the danger point. While, on the contrary, it would be wasteful to do much smudging until just before sunrise—say commencing an hour before sunrise and continuing from one to three hours thereafter, according to the conditions. An ironclad rule cannot be given, for the conditions change so frequently, and every one will have to be governed entirely by those he finds locally. While the apparatus we are using is crude, it may be the foundation on which some more ingenious grower can build something better. I think it is only possible to solve this problem by giving publicity to any improvement that may be made, and that will assist in any way in solving this problem.

## THE VINEYARD.

### Ampelography, and Its Use to the Practical Viticulturist.

**TO THE EDITOR:**—It is practically only since the disastrous depredations of the phylloxera have caused the viticulturist to seek among the wild vines of America for species resistant to the attacks of this insect and sufficiently adaptable to the multiple requirements of cultivation, that ampelography has become a study of prime necessity to even the smallest grower, who can not, as heretofore, be certain of success when imitating a successful neighbor. I propose in the present article to indicate the practical use and value of ampelographical studies to the California viticulturist, who is, or soon will be, reconstructing his vineyard. And I may safely say that the problem of reconstruction would be neither as arduous, nor as fruitful in disappointments, as it is largely at present, if he only knew what he was planting, which, too often, he does not.

To illustrate this assertion, which might otherwise be denied, by a concrete case (many might be cited, but one must suffice), in which I was an unfortunate participant:

A bought from a reputed nurseryman a couple of thousand Rupestris Martin, so called. I bought from A 100 of said vines to test their adaptability, and found, as soon as they had grown sufficiently to be identified, that I was the proud possessor of a motley crew, composed of 10% Riparia and three varieties of Rupestris; but of Rupestris Martin there was not one!

This happened a few years ago, and I had about forgotten my misadventure, when this winter it was recalled to my memory by the fact that A was advertising Rupestris Martin cuttings for sale.

Now, the importance of knowing exactly what one is buying is here forcibly illustrated; for let us suppose that A sells his cuttings to E, and that A's soil was well suited to the Riparia; then the original percentage of Riparia would be proportionally increased; and, let us suppose further, that E is an equally observant man—a possible case, one will admit—and that his land is dry and stony. These assumptions accepted, it follows that E will find that 20% or 30% of his vines die during the first and second years, and concludes that the Rupestris Martin—which he has never had in his possession—are worthless.

We all know the tenacity of ill-founded opinions. Such incompetency on the part of nurserymen and growers is certainly the principal cause of the wide-felt distrust of resistant stocks, and justifies in a measure the hesitation of small growers, who regard reconstruction as an endless expense of time, energy and money.

**HOW CAN THIS BE AVOIDED?**—Let us now examine in what way ampelography may be of use to the vine



grower, and with what least possible science and minutiae he can become sufficiently master thereof to protect his interests.

The name ampelography is derived from two Greek words: ampelos (vine) and grapho (I describe) and is, therefore, concerned with the classification and description of vines.

By ampelographical methods, a Rupestris may be separated from a Riparia—in this case an obviously easy task; but, to distinguish one variety of Rupestris from another, one variety of Riparia from another, can not be done without close scientific observations of the variations, often slight, of characteristic parts of the plant—the apparent intuitive discrimination of the common laborer being based, though he, perhaps, ignores it, on the very characters that ampelography employs in its classifications.

**POINTS TO OBSERVE.**—The important characters to note in identifying resistant stocks—with which we are solely concerned here—may be reduced to the three following:

1. The general appearance of the growing vine, observed about midsummer, or when active growth ceases; position of canes and secondaries; erect, semi-erect or trailing.

2. The characters of the shoots and leaves: On examining shoots, it is well to disregard the first three nodes, as growth hardly becomes regular before the third leaf has developed.

In shoots, any one of the following characters should be noted: Whether glabrous or tomentose; elbowed or straight; the color of immature and mature wood; the length of the internodes, (for example: short in Rupestris St. George, long in Riparia Gloire de Montpellier); and, lastly, the prominence of the nodes.

**Leaves:** The angle formed by the blade of the leaf and the petiole, whether acute, right or obtuse, (example: Rupestris Metallica, acute; Solonis and Champini, about a right angle; Rupestris St. George and Riparia Gloire de Montpellier, obtuse); the size and shape, cordate, orbicular, elongate, etc.; color, bright or dull; smooth or rugose; thick or thin; coriaceous or parchmenty; tomentose or glabrous, observing upper and lower surface; the number of lobes, noting especially the form of the primary sinus, (example: Rupestris St. George, in the form of a brace; Riparia Gloire de Montpellier, U-shaped; Riparia Grande Glabre, V-shaped); the character of the teeth, whether obtuse or acute, in one or two series.

[I judge from the close resemblance between the two names that the Riparia a Grandes Feuilles (large leaves) of the Niles Nursery Co.'s catalogue is the Grande Glabre (large glabrous). However this may be, I suggest that the Riparia Gloire de Montpellier and Grande Glabre be called, respectively: Riparia Pride of Montpellier and Large Glabrous, for the reason that foreign names are liable to deformations which unnecessarily obscure the originals.]

3. It may be advantageous, especially when identifying Rupestris, to know the character of the flowers, whether hermaphrodite, female or male. I will cite an example: The Rupestris St. George has male flowers only; thus, if one has a Rupestris showing such a typical character of the St. George as the primary sinus in the form of a brace, but with other than male flowers, it may be at once concluded that said vine is not the St. George.

Close attention to the characters above pointed out, and some practical observations in the field, will give one sufficient knowledge to ascertain with a fair approximation the variety of the species of resistant stock one is growing.

**ACCURATE DESCRIPTIONS FOR REFERENCE.**—But, some one will observe, an accurate description of the plant must first be obtained. Of this difficulty I am quite aware, and have no knowledge that anything like a fair monography of a resistant stock has yet been published in California. In the bulletins of the Agricultural Experiment Station the descriptions that have been given of the various resistant stocks are generally too brief.

For instance, the following description of the Rupestris St. George, which I extract from one of the bulletins (Bulletin 127, Bench Grafting Resistant Stocks) illustrates very well indeed the necessity of describing critically and thoughtfully:

Rupestris St. George: Canes erect, the main laterals spreading, with short internodes and prominent nodes; leaves small, wider than long, with metallic sheen, undulating edges and relatively thin, those of the laterals often very small and somewhat bronzed near the tips.

Such a description as this is obviously insufficient. For instance, the writers forget to say that the leaves are entire. I have seen a variety of Rupestris bearing always a few three-lobed leaves, which shows that, though the leaves of the Rupestris are generally entire, it does not follow that it is superfluous to mention that they are so.

Then, again, the primary sinus in the form of a brace is almost quite characteristic of the St. George, and the teeth are irregular, relatively acute and clearly cut; those at the apices acuminate.

By the addition of the above characters to the description of the St. George quoted, its identification amongst a whole field of Rupestris would be comparatively easy.

The above remarks bring, I think, sufficiently forci-

bly to one's attention the necessity of describing vines with care, so as not to omit any characters, however trivial in appearance.

I hope that those who have perused these few remarks, imperfect as they may be, will have been sufficiently awakened to the practical importance of ampelography to observe and note with care, and thus be able to account for some of the problems with which they now, or will soon, have to deal.

**IMPORTANCE OF CAREFUL OBSERVATION.**—Let us give an example to illustrate more forcibly the importance and value to the viticultural world of careful and exact observations, of which the Californian, I hope, is as capable as his French brethren. All the best resistant stock we have, not including hybrids, have been obtained through selection. The Rupestris St. George, for instance, was found in a gentleman's vineyard, and isolated from among hundreds by the watchfulness, care and insight of the owner.

**CONCLUSION.**—The small grower, whose resources are naturally somewhat limited, is still at the mercy of the ignorant or careless nurseryman or grower from whom he buys his stock, but has no excuse for not detecting non-uniformity in his plantations.

When the California viticulturist shall have learned to blindly trust no man and to keep an argus eye on his stock, the unsightly and costly efforts at reconstruction will disappear and some accurate knowledge will be obtained as to the right stock for a given soil.

Until the viticulturist has learned to know exactly what he has planted, nothing conclusive can be learned as to the real—for we have many possible—adaptations of the numerous stocks.

Berkeley.

AMPELOGRAPHER.

## THE SWINE YARD.

### The Duroc Hog.

**TO THE EDITOR:**—I have looked in vain in your most excellent paper to see something said about the Duroc hog, but have concluded that he is not very extensively known in California, hence I give you what I have been able to learn from my correspondence and my limited experience with this breed of hogs. The Duroc is a breed of red hogs, which has been raised in New York for many years. They are fine and attain great weight and have good constitution, producing a good quality of meat.

**ORIGIN.**—Mignette's "History of the Consulate" mentions the red swine of northern France. This, perhaps, coupled with the fact that the name Duroc is a French name, has doubtless led some writers and contributors to agricultural papers to conclude that he was of French origin. Clark Petit's "History of the Hog" states that in 1832 a pair of red pigs were shipped to Salem, New Jersey, but does not tell where they came from or to whom they were consigned. It is a fact, however, that red hogs of uniform color and great size have been bred in New Jersey and in the New England States for at least a century. Hon. Henry Clay of Kentucky is said to have imported four red pigs from France in 1837 and to have been so well pleased with them that he bred them on his farm near Ashland. Hon. James B. Clay is said to have imported a pair of red hogs from Spain during his residence at Lisbon, Portugal, as minister of the United States.

It makes but little difference whether we prove his noble birth and illustrious origin or not. He is here; he is no longer the approaching hog, but the hog that has already arrived. He is here to stay, and is at home from Manitoba to Texas, from Maine to California, and, wherever found, is always hungry and ready for his dinner. I consider this breed the best in the world, all meritorious and derogatory points considered. This hog is gaining ground as no other breed has done, and that, too, in the face of the strongest competition ever known in swine breeding in America. There are ten herds of red hogs in this country to-day for every one there was six years ago. In proportion to numbers, they have captured more than their share of premiums at all exhibitions where they have been in competition. These facts should arrest the attention of all swine breeders. If the red hog will live the most of the year on pasture, is more free from disease, more prolific and better mothers, and if it will bring the farmer more dollars than any other, it is the hog he wants. If the red hog is a rustler, an easy fatterer, a good grower, and puts as much or more weight for a given amount of food than any hog, it is the hog he wants. I am satisfied that in all these essentials the Duroc stands second to none.

**A TRIAL.**—Relative to increase of weight for a given amount of food, bear with me while I refer to the test made two years ago at the experimental station of the Michigan Agricultural College. Three breeds were represented—Berkshires, Poland Chinas and Durocs—two of each and all barrows. The pigs were weighed every fourteen days during the experiment, and the gains or losses noted and compared with the food of the period. The test lasted from July 16th to January 31st—168 days. It was shown that the two Durocs gained in weight from the beginning. Though as fleshy as any specimens, they

were still making excellent gains, and were feeding well up to the time of slaughter. Their average gain was 36.25 pounds, or 2.59 pounds per day secured at a cost of 4.65 pounds grain, live weight. The average gain made by the two Berkshires was 29.16 pounds per period, or 2.11 pounds secured at a cost of 5.22 pounds of feed for each pound of gain. The average gain per period of the Poland China was 25.91 pounds, or 1.85 pound per day, secured at a cost of 5.87 pounds of feed for each pound of gain. The experiment stations of other States have made similar experiments with about the same results.

**CHARACTERISTICS.**—The Durocs are good feeders, fatten readily at any age, and, one thing more, they will fatten and grow at the same time, thus making them very profitable hogs to raise. They are profitable to feed longer than other breeds of hogs. If the price does not just suit when they are fat, you can feed longer, there being no fattened stunts among them. How often do we hear it said, "I will have to sell my hogs if the price is a little low, because they are doing no good; can't see as they gain a pound." We will just say to those, "Get the Duroc, then you can feed them profitably till the price goes up."

Another breeder's opinion: "I have nearly reached my three score and ten, I have tried every breed for which a premium is offered, and I say from six years' experience that no better stock for any purpose has ever been brought south than the Duroc. They will thrive better on grass, respond quicker to full feed, keep in better health and make more toothsome bacon or pork than any other breed. In constitutional strength and prolificness none approach them."

The red hog is profitable because a few will raise many, it is a good feeder, takes on flesh rapidly and grows to an enormous size. In conclusion, let me mention the past, present and future hog. In the past we have had a good hog, at the present we have a better one and in the future we want the best; and while we are looking for the best, we dare not pass by the Duroc hog, for if we do we may have to retrace our steps and come back to him. Let us see what there is in him that is attracting so much attention—it may be the hog we are looking for, as he is rapidly coming to the front, and my predictions are that he is the hog for the twentieth century.

Bishop, Inyo county.

J. L. BOURLAND.

There was something of an interest in Duroc hogs in this State about twenty years ago, and there were several herds in the Monterey district, but they have largely passed out of notice. Since then the hog has been considerably improved and brought up to modern ideals and is worth the attention of growers. We shall be glad to have further discussion of the subject.

THE temperature of steam in contact with water depends upon the pressure under which it is generated. At the ordinary atmospheric pressure (14.7 pounds per square inch) its temperature is 212° F. As the pressure is increased, as by the steam being generated in a closed vessel, its temperature and that of the water in its presence increase. Saturated steam is steam of the temperature due to its pressure—not superheated. Superheated steam is steam heated to a temperature above that due to its pressure. Dry steam is steam which contains no moisture. It may be either saturated or superheated. Wet steam is steam containing intermingled moisture, mist or spray. It has the same temperature as dry saturated steam of the same pressure.

A SIDE HILL DITCH is best constructed in two stages. First the grade of the top of the ditch is leveled off and the inside bank slope completed. Powder can be used to advantage in this. A row of holes is drilled down to the level of the grade and from 12 to 18 inches in front of where the inside bank slope will be. These are loaded so that on blasting the broken rocks and earth shall be thrown off of the grade. The grade is then completed with scrapers and pick and shovel work. After the grade is completed the ditch cut is made in it. Powder is here used carefully to avoid injuring the outside solid bank. Unless the material should be compact rock, plows and scrapers can be used to economize on the more costly pick and shovel work.

THE effective horse power of an engine is the indicated horse power minus the number of horse power required to run the engine without a load. The nominal horse power of an engine and the indicated horse power are two very different things. The indicated horse power is the calculated horse power obtained from known data and may or may not be the same for the same sized engine in any two instances, while the nominal horse power remains the same—with the same rule—for the same sized engine. The term "nominal horse power" is deservedly going out of use. It is too indefinite and uncertain for the twentieth century engineer.

THE effective head of a water power is the total fall or head of the water, measured from the surface of the water in the penstock to the center of the tip opening of the nozzle through which the water is discharged on the buckets of the water wheel, less the sum of the heads due to friction and other resistances to the flow of the water through the pipe and other conduits to the point of application. The effective head of a water power is that part of the total head which does useful work. It is the head that gives the velocity to the water jet.



## THE DAIRY.

## California Butter Scoring Contest.

At the annual convention of the California Creamery Operators' Association, held last December, the opinion was unanimously expressed that one butter contest a year was not sufficient for the benefit derived from a contest or as a basis on which a butter maker can prove his ability in his profession. Seasons and conditions vary according to the time of the year, so that at one time a butter maker in one section of the coast may be unable to make a creditable article, while the butter maker in some other section at the same time has every advantage.

What the creamery operators seem to want is a contest or series of contests that will indicate the operator and the district whose butter will prove the best in quality throughout the year. To carry out this idea, the Association announces four contests at equal intervals during the year 1902. The first one will be held in San Francisco, Friday, April 11, 1902. The other three contests will be held in June, September and at the annual convention in December, the exact dates to be announced later.

**RULES.**—Two classes of entries have been arranged for. These will be public creameries and private creameries. All butter makers who make butter in creameries with five or more patrons will be permitted to enter the public creamery class. Butter makers in creameries with less than this number of patrons must enter the private creamery class.

All packages entered must contain not less than twenty pounds of butter. Larger packages can be entered.

All butter entered must be made on or before the fifth day preceding the contest and must be immediately forwarded to San Francisco, where the contest will be held. This arrangement will not permit near-by contestants any advantage over those who have to ship greater distances.

Entries will be scored on the following scale of points: Flavor, 45; body, 30; color, 10; salt, 10; package, 5; total, 100.

The contest is open to all butter makers of the Pacific coast States. No preservative is allowed in any entries.

The executive committee reserves the right to investigate whether all those making entries have complied with the rules, and, if irregularities have been practiced by winners of prizes, to withhold the prizes and award them to the next highest score.

Full particulars and blanks for entries can be had from the secretary, W. H. Saylor, at the office of the California Dairy Bureau, 114 California St., S. F.

## Oranges in Placer County.

Mr. J. Parker Whitney of Rocklin, Placer county, has printed for general circulation a neat little pamphlet entitled "The Orange Tree; Its Planting and Cultivation." It gives interesting accounts of local experience and describes a way by which trees can be made to succeed even on rather shallow and unfavorable soils if one is willing to follow the very thorough method which Mr. Whitney describes. Of course, the local climate and water supply must be suitable. The pamphlet is very brightly written and interesting.

## Horse Owners! Use GOMBAULT'S



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A Safe Speedy and Positive Cure  
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

## SHEEP AND WOOL.

## The Gentle Angora.

Philo Ogden of Upper Lake, Cal., writes to the American Angora that the time has passed when the beautiful and popular Angora needs to be bolstered up with fiction rivaling the "Arabian Nights" to make it attractive to lovers of a beautiful animal, or to capitalists seeking investment. I have waited a long time for some of the older breeders of Angoras to correct the prevailing opinion of the wonderful fighting qualities of the Angora; how it kills dogs and wolves and other troublesome animals which intrude upon its territory. They are probably afraid they will lose the sale of a few goats at high prices as a protector of the range, or they feel like the parents who have taught their children to believe in the saint—dear old Santa Claus—coming with his team of reindeer hauling his sleigh loaded with all that the childish heart could wish, and hunting up good children's stockings to fill. They know the time must come when the truth must be told to the older children, but they hope somebody else will tell them the truth. They do not like to tell the children how they have deceived them for years. Men who write about their goats driving off or killing stray curs and other animals simply advertise the Spanish or other base blood in their flocks, for the pure Angora has about as much fight in him as a jack rabbit. It is the most timid and nervous of any of our domesticated animals. By patience and kind treatment the herder and his dog can gain their confidence, but let a strange dog or man come near the flock, and they get excited and bunch up together. If a dog, wolf or other animal attacks them they will run to the highest point near them and bunch up. The old bucks, stags and the strongest animals and supposed fighters will crowd to the center of the flock and stamp their fore feet and show defiance when out of danger. The weakest goats are forced to the outside of the bunch, and are the ones killed by dogs and wild animals. This bunching up often saves them from attack, but if a dog or other animal has the courage to grab a goat the flock will sway back and finally break for another elevation, and again bunch up and wait for the dog or wolf to pick up some of the weaker goats crowded to the outside. I have watched these maneuvers and have never yet seen any attempt to rescue the unfortunate goat caught. The people in general have got all they know about goats from the common short-haired or the Spanish goat, which is said to be a great fighter, and with them a goat is a goat. There is as much difference in the beautiful Angora and the common or Spanish goat as there is between the buffalo and the pet family cow.



**SHEEP MONEY IS GOOD MONEY** if you work for us. We will start you in business and furnish the capital. Work light and easy. Send 10 cents for full line of samples and particulars. DRAPER PUBLISHING CO., Chicago, Ill.



**SHOEMAKER'S POULTRY** and **BOOK ON** and **MANAGER** for 1902. 100 pages, over 100 illustrations of Poultry, Incubators, Brooders, Poultry Supplies, etc. How to raise chickens successfully, their care, diseases and remedies. Diagrams with full description of Poultry houses. All about incubators, Brooders and thoroughbred fowls, with lowest prices. Price only 1/2c. C. C. SHOEMAKER, Box 243, Freeport, Ill.



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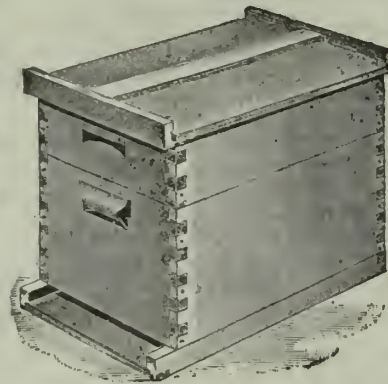
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## New Reduced Wholesale Price List of

## BEE KEEPERS' SUPPLIES



for season of 1902 While these are intended for Agents and the Trade we let them apply also to large users and Clubs ordering together in quantity. Also our retail prices, which are as low as it is practical to handle small orders and furnish the high quality of supplies which we make our specialty. We cannot guarantee these special prices except on early orders, as cost of material is constantly advancing.

## Modern Langstroth Dovetailed or Lock Corner Hives.

All K. D. packed for shipment and free on cars or vessel.  
One Story with Cover, Bottom, 8 self-space Brood-Frames, Staples, (AE5-8) Division Board, Tin Rabbits and all nails, At retail, each \$1.15.  
90c each for 100, 92c ea. for 50, 94c ea. for 25, 95c ea. for 10, \$1 ea. for 5.  
Same, with Comb Foundation Starters for Frames, add 5c per hive.  
One and One-half Story with Cover, Bottom, Frames, Staples, Div. Board (AE52s) and Rabbits, making the first story or brood chamber, also Super or comb honey chamber with Section Holders, Tins, Separators and all nails, but without sections, At retail, each \$1.50.  
\$1.15 ea. for 100, \$1.17 ea. for 50, \$1.19 ea. for 25, \$1.20 ea. for 10, \$1.25 ea. for 5.  
One and One-half Story, COMPLETE, including all mentioned above, (AE64s) also 24 Honey Section in Super, and Comb Foundation Starters for brood frames and honey sections, At retail, each \$1.75.  
\$1.36 ea. for 100, \$1.40 ea. for 50, \$1.44 ea. for 25, \$1.45 ea. for 10, \$1.50 ea. for 5.  
Two Story (Two Brood Chambers both filled with Self-space Frames) with Cover, (AE55) Bottom, Div. Board, Rabbits, Staples and nails, At retail, each \$1.75.  
\$1.36 ea. for 100, \$1.40 ea. for 50, \$1.44 ea. for 25, \$1.45 ea. for 10, \$1.50 ea. for 5.  
Supers, Comb honey Chambers with Section Holders, Tins, Separators (2s) and nails, but without sections, At retail, each 35 cents.  
28c ea. for 100, 28½c ea. for 50, 29c ea. for 25 or for 10 30c ea. in lots of 5.  
Supers, COMPLETE, with Holders, Separators, Tins, nails, (3s) also 24 Honey sections with Comb Foundation Starters, At retail, ea. 60 cents.  
45c ea. for 100, 46c ea. for 50, 48c ea. for 25, 49c ea. for 10, 50c ea. for 5.  
Instead of the Slotted Holders, Slotted Separators and Bee Way, 4¼x4¼x1½ in. Sections which we furnish regularly, when orders for complete hives or Supers do not state otherwise, we can furnish, when requested, the Plain Holders with Fences or Slat Separators and Plain Sections, 4¼x4¼x1½ wide without bee ways.

## Hive Parts, Sections and Comb Foundation.

Brood Frames, Hoffman Self-spacing with end staples and nails, \$20 per 1000, \$11 per 500, \$2.40 per 100. Retail, each 3 cents.  
Staples, enough for 1000 frames 60c, for 100 frames 10c, per pound 25c.  
Division Boards, 75c per dozen. Retail, each 8 cents.  
Section Holders, slotted, including end blocks, \$14.50 per 1000, \$7.50 per 500, \$1.75 per 100. Each 2 cents.  
Plain Holders, with end pieces for plain sections, \$13.50 per 1000, \$7 per 500, \$1.65 per 100. Each 2 cents.  
Separators, sawed and slotted, \$9 per 1000, \$4.75 per 500, \$1 per 100. Per dozen, 15 cents.  
Fences, or cleated separators, Style S, for use with plain sections in slotted holders. Style P, for use in plain sections in plain holders. Either style, \$15 per 1000, \$8 per 500, \$1.75 per 100. Each 2 cents.  
Sections, Choicest No. 1 White Basswood highly finished, 4¼x1½ open top and bottom, or 4¼x1½ plain, Either size 10,000 \$35, 5000 \$18, 1000 \$4, 500 \$2.25. Per 100 50 cents.  
Comb Foundation, New Weed Process, Medium Brood for brood frames, 100-lb. @ 43c, 50-lb. @ 44c, 25-lb. @ 46c, 10-lb. @ 48c. Lb. 50 cents.  
Thin Super for honey sections, 100-lb. @ 50c, 50-lb. @ 52c, 25-lb. @ 53c, 10-lb. @ 56c. Lb. 60 cents.  
T Tins, 12 and 14 inch, \$1.25 per 100. Each 1½ cents.  
16 inch, \$1.50 per 100. Each 2 cents.  
Flat Tins, 14 and 16 inch long, 65c per 100, 35c for 50. Each 1 cent.  
Tin Rabbits, 12 and 14 inch long, \$1.25 per 100. Each 1½ cents.  
Wire, Tinned, for frames, 5-lb. \$1, 1-lb. 30c, ¼-lb. 20c. 1 ounce 5 cents.\*  
Clamps, Van Dusen, for hive corners, per dozen pair 50c. 1 pair 5 cents.  
Honey Boards, perforated zinc, 100 50 10  
No. 11, unbound, 12x19...\$17.50 \$ 9 00 \$2 00...Each 22 cents.  
1, unbound, 14x19... 20.00 10.00 2 25...Each 25 cents.  
13, woodbound, 13x20.. 23.00 12.00 2 50...Each 30 cents.  
12, woodbound, 16x20.. 26.00 14.00 3.00...Each 35 cents.  
Zinc, sheets, perforated, 28x96 inches \$2, 24x40 inches \$1.  
Entrance Guards, 10 for \$1. Two for 25 cents.  
Queen and Drone Traps, Alley's, per dozen, \$6.00. Each 60 cents.  
Bee Escapes, Porter's, per dozen \$2.25, 6 for \$1.15. Each 20 cents.\*  
With boards attached, per dozen \$4.00, 6 for \$2.25. Each 40 cents.  
Foundation Fasteners, Daisy, without lamps, 6 for \$4.00. Each 75 cents.  
Parker, 6 for \$2.25. Each 75 cents.  
Foundation Roller, Daisy, per dozen \$1.50. Each 15 cents.  
Foundation Cutter, Carlin, STEEL, dozen \$2 50, 6 for \$1.35. Each 25 cents.  
Spur Wire Embedder, per dozen \$1.50, 6 for 80c. Each 15 cents.  
Honey Knives, Bingham or Novice, 3 for \$2.25. Each 85 cents.  
Honey Extractors, and Uncapping Cans, prices upon application.  
Comb Bucket, extra strong, our make. Each \$2.00.  
Smokers, Clark Cold Blast, per dozen \$6, 6 for \$3.25. Each 60 cents.  
Bingham "Doctor," 6 for \$7.25, 3 for \$3.65. Each \$1.25.  
Corniel, 6 for \$5 00, 3 for \$2.75. Each \$1.00.  
Crane, 5 for \$6 50, 3 for \$4.00. Each \$1.50.  
Gloves, Rubber, sizes Nos. 9, 10, 11, 12, 3 pair \$3.75. Pair \$1.35.  
Bee Brushes, Davis and Cogshall, 6 for \$1.00. Each 20 cents.\*  
Bee Veils, No. 2, with silk face, 6 for \$3.00, 3 for \$1.60. Each 60 cents.\*  
Globe, steel frame with silk face, 3 for \$2.60. Each \$1.00.\*  
Swarm Catcher, Manum, without pole. Each \$1.00.  
Feeders, Simplicity, per dozen 50 cents. Each 5 cents.  
Miller (knocked down), 6 for \$1.75, 3 for \$1.00. Each 35 cents.  
Boardman (K. D., no jar), 6 for \$1.25, 3 for 65c. Each 25 cents.  
Italian Queen Bees, prices upon application.  
Cages, Benton, per dozen 35c, 6 for 25c. Each 5 cents.\*  
Miller or West, per dozen \$1 25, 6 for 75c, 3 for 40c. Each 15 cents.\*  
Queen Cell Protector, West, per dozen 50c. Each 5 cents.\*  
Wax Extractors, Doolittle Solar, \$5.00, Boardman Solar \$10.00.  
Swiss Steam \$5.00, German Wax Press, \$15.00.  
A. B. C. of Bee Culture, cloth bound, 500 pages, illustrated. Postpaid \$1.20.\*  
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## Agricultural Review.

### ALAMEDA.

**ALMONDS PROMISE LIGHT YIELD.**—Niles Herald: The storm last Saturday did little or no damage in this section except to almond trees, where it blew off the buds. This, with the washing the blooms received, will in all likelihood cause a light crop. The trees are beginning to leaf out and present a very pretty appearance at this time. The apricot trees are beginning to show bloom in many orchards. Early vegetables, such as peas and asparagus, are being marketed in a moderate way. The cold rains have kept all vegetables back this spring.

### KINGS.

**DIPLOMA AWARDED THE TILTON APRICOT.**—Hanford Sentinel: J. W. Bairstow has received a diploma from the California State Fruit Growers' Convention at Sacramento for his exhibit of the Tilton apricot made by him at the last convention held last October. This apricot is a new variety and has been put upon the market by Mr. Bairstow. The certificate received from the State organization is of the first grade, and means that the Tilton apricot has become established as the leader in bearing, as it is a premium winner in form, size and flavor as well. The certificate arrived after much unavoidable delay. Mr. Bairstow has introduced this apricot throughout the State and still has on hand at his Hanford nursery a number of the trees which he will close out this spring at a reduced price rather than carry them over. The late Luther Burbank said of this apricot, after giving it a thorough test: "The fruit ripens more evenly throughout than any apricot which I have ever seen; and, as it is early, smooth, of good size and of excellent quality, and as you say productive, I must believe it to be one of the best of all apricots—possibly the best—taking into account its unusual productiveness."

### LOS ANGELES.

**EGGS GO TO SMASH.**—Herald: With the opening of spring in southern California each year the bottom drops out of the egg market. This season has been no exception, the actual decline setting in on Monday and continuing yesterday, when commission men freely offered eggs at 13 cents a dozen wholesale. The receipts have been enormous, while at country points a large surplus is reported. Retailers are well supplied, as the ranchers have been supplying the demand direct in exchange for goods. Hence jobbers find stock accumulating. Offers for eggs at 12 cents at country points were yesterday made and in some instances accepted. At 15 cents a dozen at retail, eggs are cheaper than meat, and as meat has not declined the advantage of an egg diet is apparent. Whether eggs will be retailed at two dozen for 25 cents is a mooted question in trade circles; still, there are egg dealers who say this cheaper price may prevail.

### ORANGE.

**BEE MEN WILL SELL HONEY.**—Santa Ana correspondence Los Angeles Herald: Bee men throughout the country who have been holding their honey for a higher price have since the rain decided to unload, and considerable honey has in consequence been contracted for within the past few days. The Columbia Mercantile Co. of San Francisco has been the principal purchaser, and through its agents nearly fifty tons has been secured. The price paid was 4½ cents a pound f. o. b. here, and the contract called for delivery and shipment on the 13th. There is not much honey left in the county, and the greater part of what is here will go to supply the local demand.

### SAN JOAQUIN.

**A PROFITABLE COW.**—Stockton Mail: Representatives of the experimental station of the University at Berkeley have just completed a seven days' official test of the Holstein-Friesian cow Olympia Clay, owned by the Pierce Land & Stock Co., at its Riverside ranch on Rough and Ready island, near Stockton. The cow was raised by Senator Paris Gibson of Little Falls, Mont. During this test she gave 526 pounds of milk, a daily average of over 75 pounds, and made over 18 pounds of butter, being three times that of an average cow. This places Olympia Clay in the official advanced registry. She has three daughters on the ranch, from whom great records are expected. This test was made under the most unfavorable conditions, the weather being stormy and the worst of this entire winter. It is believed that under more favorable circumstances she would certainly have made over 20 pounds of butter during the seven days.

**EARLY CUCUMBERS.**—Lodi Herald: One of the four Japanese who is engaged in the culture of cucumbers on the Wm.

H. Derrick place, on the river near Woodbridge, says he will have ripe cucumbers on the market by April. With three of his fellow countrymen he has prepared for the cultivation of four acres. The vines in the hot bed have already attained a growth of 6 inches. When the Japs, about a month ago, commenced their work hardly any one expressed the belief that they would be able to market their crop within a month from the time promised. But those who have witnessed recently the method of cultivation are inclined to the opinion that the experiment will prove successful. A wall 8 feet high made of brush and thatched with straw encloses the patch and stands as a wind breaker. Double rows of barley 18 inches apart and growing between each vine row will afford extra protection from the wind. Inside of the 8-foot walls are trenches dug to a depth of 3 feet with layers of manure and sand covering. These are the hot beds where the seed was planted. Every night the tender vines are protected with a covering made of straw and newspapers thatched with string and covered with canvas. These coverings are 4 feet square and not only afford protection from cold, but add a warmth to the soil that accelerates the growth of the vines. When cucumbers in June retail at the rate of three for 10 cents, it will be readily seen that these Woodbridge Japs will have a mint when tons of their colicky vegetables are on the market in April.

**A HEAVY BEEF.**—Lodi Sentinel: A steer raised at the ranch of Chas. Wakefield, and which has just been killed, was an excellent specimen of beef, dressing 1100 pounds.

**ROAD TAX ON SHEEP.**—Stockton Independent: At the meeting of the Board of Supervisors an ordinance was adopted imposing a tax of 5 cents per head on all sheep driven on the county roads. After the ordinance had been presented by Supervisor French, an amendment was offered by Supervisor Newton to postpone action till the next meeting. The amendment was lost and the ordinance adopted.

### SAN LUIS OBISPO.

**PROSPERING BUT KICKING.**—Tribune: This section is enjoying a season of unparalleled prosperity, although some of the dairymen complain that "the cows are not doing very well." The cows generally are each yielding one pound of butter per day, for which the dairymen received 27 cents. They kick, probably, because the cows do not yield two pounds. Some of them forget the season of 1896, when butter sold in Cayucos at 10 cents a pound, and the yield was but little better than now.

### SANTA CRUZ.

**APPLE PACKERS NOT IN A HURRY TO MAKE NEW CONTRACTS.**—Watsonville Pajaronian: A few sales of small apple orchards have been made within the past two weeks, but there is no rush or excitement. In fact, packers are looking at the season very conservatively. Most of the large orchards of Watsonville district are sold for this year, and some for a longer time. The packers reason that they have quite a large sum invested in the uncertainties of the season's apple crop and prices, and that they can wait to see what the crop and the markets will bring forth. The prospects now are much against a big purchasing boom during the blossom period.

### SOLANO.

**PROSPECTS FOR IMMENSE FRUIT CROP.**—A dispatch from Vacaville says: Never before in the history of Vaca valley have the fruit growers felt so certain of a full yield of deciduous fruits as at the present time, and that they have abundant reason is proved by a glance at the orchards throughout the district. The new wood growth on all varieties of trees looks healthier, the buds are firmer fixed and more hardy, and the soil is in an excellent condition. This splendid outlook has for its cause two things—first, the crop of last year was about one-half of an average yield, and therefore nearly every orchard had a much needed rest; second, every drop of rain that has fallen this winter, with the exception of the last storm, has soaked into the ground instead of running off, as in former years. Besides, the acreage is greater now than ever before, and the splendid prices realized last year for both green and dried fruit placed the market in prime condition for handling an immense crop the coming summer.

### SONOMA.

**POULTRY AND EGGS.**—A. S. Luce, secretary Sonoma County Board of Trade, says: The annual output of this community is upwards of \$2,000,000 in value. The advantages of poultry and egg raising in Sonoma county are, its nearness to a reliable market, quick cash returns, and length of season. The lower portion of the county, in the vicinity of Petaluma, is largely devoted to this industry; possibly

one-half of the poultry and eggs that are shipped from the county are shipped from Petaluma. It is stated on good authority that from this point alone 2,600,000 dozen eggs and 20,000 dozen chickens were shipped last year, as high as 14,000 dozen eggs being shipped in one day. A few make as high as \$1.50 to \$2 per hen, and there is no danger of collapse in prices. As proof, note the hundreds of carloads of poultry and eggs imported from the East each year by the commission houses of San Francisco.

**Sotoyome Sun:** A. B. McMichael has 200 hens, some of which are only pullets. They are mostly White Leghorns and Minorcas, with a few Plymouth Rocks. From this flock he sold during the past three months 600 dozen eggs. The price received for the eggs ranged from 17 to 38 cents per dozen. The total receipts for eggs for the period named was \$155.50, or an average of 25½ cents per dozen.

**PROFITS OF DAIRYING.**—The average annual production of butter for the whole State is 100 pounds per cow, while in Sonoma county the average annual production per cow will run from 150 to 200 pounds. A conservative estimate places the number of dairy cows in the county at close on to 27,000 head that give an annual yield of nearly 5,000,000 pounds of butter valued at \$1,100,000, or an average of about \$41 per cow, saying nothing of cheese produced. The dairies number from 40 to 250 cows each, the greater number being between 100 and 200. Petaluma, Santa Rosa, Bodega and Valley Ford are the chief places from which dairy produce is shipped and from these points, by rail and water, large shipments are made weekly to San Francisco and other markets. The many large and finely equipped creameries in the county handle about all the milk, when it is weighed in and paid for according to test, the average being about 4% or four pounds of butter fat to 100 pounds of milk.

**PIONEER ORANGEMAN.**—Santa Rosa Republican: J. A. Kleiser, the veteran olive oil maker, who has had such excellent exhibits at Santa Rosa and Cloverdale, is alleged to be the first man who planted an olive or orange orchard in Cloverdale. A tree of each was planted during 1860. This old olive tree last year bore 400 pounds of fruit. Mr. Kleiser has in all 800 trees of sixteen varieties.

### STANISLAUS.

**SUPERB LEMONS.**—Modesto Herald: Louis Levaggi of La Grange has sent to the Board of Trade, through Supt. Child of the Turlock canal system, a small box of superb lemons for exhibit purposes. The fruit comes from four-year-old trees and is large, firm, clear skinned and handsome, a rich golden in color. It is fruit superior in appearance to anything of the kind to be found in the local market.

### SUTTER.

**SIXTEEN THOUSAND ACRES OF TULE LAND LEASED.**—Sutter County Farmer: A document was filed in the recorder's office at Yuba City Monday wherein the Western Dredger Co. of San Francisco leased to Morris Marsh, also of that city, 16,668 acres of tule land in the southwestern portion of this county for a term of ten years. Mr. Marsh agrees to fence, cultivate and stock with cattle such portions of the tract as are subject to such improvement and pay to the Western Dredger Co. one-fourth of the net proceeds of such business. He has also the right to re-rent the same. The company agrees to furnish enough land on the Sacramento river for suitable boat landings and the erection of warehouses, etc. This large tract of land was formerly purchased by William Boskche, who had great plans to reclaim it, but finally gave them up for the time being.

## FERTILIZERS!

**NITRATE OF SODA** supplying Nitrogen or Ammonia,  
**THOMAS' PHOSPHATE POWDER** supplying Phosphoric Acid,  
**MURIATE and SULPHATE OF POTASH** supplying Potash,

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Can be supplied alone or mixed in any proportion to supply whatever deficiency may exist in the soil, thus paying only for what is lacking and necessary to replace.

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## GLENN RANCH, Glenn County, :: :: California, FOR SALE In Subdivisions.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

1. \$2200 buys 65 acres choice sandy land, on railroad, 6 miles from Merced Cal. Depot on land. Don't wait for your hat if you want a bargain.
2. \$1600 buys nicely improved 10-acre ranch with plenty of fruit and free water, only 4 miles from Merced.
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## THE HOME CIRCLE.

## The Optimist.

Ole Uncle Finn was a good ole chap,  
But he never seemed fer to care a rap.

If the sun forgot  
To rise some day,  
Just like as not

Ole Finn would say:  
"Oncommon dark, this here we're in,  
But 'taint so bad as it might 'a' been."

But a big cyclone came 'long one day,  
An' the town was wrecked and blowed  
away.

When the storm had passed  
We turned around  
And thought at last

Ole Finn had found  
The state o' things he was buried in  
About as bad as it might 'a' been.

So we dug him out o' the twisted wreck  
And lifted a rafter off his neck.

He was bruised an' cut,  
And a sight to see;  
He was ruined, but

He says, says he,  
With a weak look 'round and a smashed-  
up grin,

"'Taint half so bad as it might 'a' been!"

But after all, it's the likes o' Finn  
Makes this world fit fer livin' in.

When days are drear  
And skies are dark,  
It's good to hear

Some ole cuss bark,  
"Now see here, son," with a cheerful  
grin,

"'Taint half so bad as it might 'a' been!"

—Newark News.

## The Writing on the Wall.

Brant Durivage was in the neighborhood of 40 when he came back to the home of his ancestors. He was a bachelor, very tall and dark of feature. He had been abroad ten years, and as I, a young physician, had but lately settled in the adjoining town, I had never seen him. I had heard, however that he had visited many countries, civilized and savage, and had concluded that he was tired of roughing it and glad for a chance to settle down beneath the roof of his fathers.

His old acquaintances did not see much of him after he came home. He nodded to his former friends, or passed them by without so much as a bow. Not long after his coming home we learned that he was courting Annie Kimball, the prettiest girl of the neighborhood, already engaged, as we believed, to Steve Morgan, a young man of steady habits, without a tithe of the wealth possessed by Brant Durivage.

Old Kimball, Annie's father, was dissipated and financially embarrassed, and the truth is that he sold his child to Brant Durivage, forcing her to break her engagement with young Morgan, who denounced the bargain in bitter language whenever he could find anybody to listen to him. At times he swore that he would "get even" with the man who had come between him and Annie.

For several weeks matters drifted along quietly. If Durivage heard of Morgan's hot words and threats, he said nothing. He seemed perfectly contented with the conquest he had won. The wedding day had been set, and Annie had become resigned to the fate from which there seemed no escape.

Steve Morgan had given up his trade but not his daily habit of cursing Brant Durivage. He had lost flesh, and his eyes had a wolfish, vengeful look. In common with others, I fully expected a tragedy of some kind, and I went so far as to share my opinion with the constable, who nodded approvingly.

The tragedy came, but not in the manner expected. At ten o'clock on the night before the day set apart for the wedding a man, whom I knew to be Brant Durivage's factotum, threw open my office door, and rushing in, startled me with the intelligence that his master had just been shot.

Thinking immediately of Steve Morgan, I promised to repair to the house at once, and in a short time I crossed the threshold for the first time. I was conducted to an upper room, where I

found the dark-faced man lying unconscious on a bed, having been carried to his chamber by a servant who, standing by me, said that Durivage had been shot through the open window of the library, which was on the ground floor.

"I pulled this out of the wound," continued the man, taking an arrow from the table, "but I'm afraid there's a bit of it left. He's shot under the left shoulder and from behind; a bad wound I'm thinking." And the servant shook his head.

I fell at once to examining my patient, and discovered that while the barb had not gone deep enough to touch a vital organ, the wound was dangerous, especially if the shaft had been poisoned. I found also that the servant was right about a piece of the arrow head remaining in the wound, for I removed it with my forceps and laid it alongside the weapon on the table.

Meantime the people attached to the estate were looking for the person who had attempted Durivage's life. The town constable had been summoned and the town itself was already in an uproar. I remained with Durivage until I could leave him to the care of the nurse, and with arrow and the detached head, I went back to my office. It was clear to me that the shaft had come from some distant land. I had seen many savage weapons in different collections, but never one like it. The shaft proper was a light reed, very straight and hard. One end had been cut off transversely and the other notched in order to receive the bow string. Next came a piece of bone nearly three inches in length. One end of it had been passed into the split, or open end of the shaft, while the other end of the bone was slipped over a short piece of reed, over which in turn, a strong wrapping of intestine had been placed. All this formed a socket for the true head of the arrow, the bone merely giving the shaft proper weight. I saw this much by the light of my office lamp; but I saw more.

The "head" was the piece I had extracted from the wound. It was of ivory, and I now saw that it had been attached to the bone weight in such a manner as to loosen itself when any one attempted to pull it from the victim's body. Under the microscope I saw that the head of the singular shaft had been coated with a substance resembling glue, but which I decided was some deadly poison. It was bitter an nauseating when applied to the tongue, and I had no doubt that its virus was then spreading itself throughout Brant Durivage's system.

I went back to the estate again before daylight, and found my patient raving in delirium. I administered opiate after opiate, and a long time passed before the medicine produced the slightest effect. The servants said he had not spoken rationally since the shot, not even during his quiet moments, and this gave me small hopes of pulling him through.

The next morning Steve Morgan was arrested on suspicion. This did not astonish me after what the pig-headed constable had said the night before. Nobody believed the young man guilty, though he did not express any sympathy for Durivage, and, after a hearing, he was discharged. He was strangely non-committal during the examination, and when it was over he came into my office and took a chair.

"Doctor," said he, leaning toward me, with a smile, "they didn't ask me to tell what I saw, did they?"

"I believe they did not, Steve," I answered, wondering what he knew.

"I saw the man that did it," I looked strangely at him, wondering if he was losing his wits.

"I saw him, but not till after the shot," Steve went on. "I was up to the house last night. I went there to ask Brant Durivage to listen to me for a minute, though I don't expect he'd have done it. Just as I was entering the garden—for I knew I would find him in the library with the window up—I heard a sharp cry, and the next moment there passed a little man carrying in one hand a box. This is as true

as gospel, doctor. He never saw me, though I could have touched him while passing; but I would not because I thought he had finished Durivage."

Morgan then went on and described the man with a minuteness that astonished me. He did it so well I thought I could see him before me, and at the end of his story he declared his intention of repeating his adventure to no one else, not even in the interests of justice.

"If he gets well he'll marry Annie," said Morgan, savagely, "and if he dies, let him rot without being avenged."

I watched Durivage closely for ten days. I could see that the secret poison was at work, and the case was a queer study that opened up to me a new field for investigation. During those ten days the wounded man seemed to suffer a thousand deaths.

On the afternoon of the eleventh day I was hurried over to the house by the butler, who said that Durivage was writing on the wall before his cot. At the foot of the stair we were met by the nurse, who with blanched face cried that all was over.

Bounding up the flight two steps at a time, I rushed into the bedroom and found Durivage lying on his face on the floor.

"You should have seen and heard him," said the frightened servant. "He awoke and called at the top of his voice for a pencil. I ran and got him one, thrusting it into his hand when I came back. As his fingers closed on it he laughed like a fiend, and, rising in bed, wrote what you see on the wall yonder, and then fell back and writhed till he pitched out upon the floor."

Before this I was at the cot and with burning eyes was looking—nay staring—at the writing on the wall.

"K'AA—K'AA—K'AA."

Here was another mystery.

"What did he say after that?" I asked, turning to the two servants, while I pointed to the writing on the wall.

"He pronounced three times something that sounded like 'kile' or 'Kala haetlwe'" was the nurse's answer. "Before I could reach him he was dead."

I was more than ever mystified. I have never heard of the written or spoken words. They were all "Greek" to me, but I felt that they were connected with the awful death Brant Durivage had died. During the next few days there ran through my mind nothing but "K'aa, K'aa, K'aa." I had the nurse repeat "Kala haetlwe" until I had mastered it, and until I left the Shropshire village and located in London—an event in my career which took place a year later—I did not let the singular words escape me.

During this period Steve Morgan did not go back to Annie. He wrote me that he would not do so until the mystery connected with Durivage's death was solved, and I felt that the solution would never come and bring the two young hearts together.

One evening I was called to attend a man who had been run over by a butcher's cart near the Strand. He had been carried to his lodgings near by, and lay bloody and gasping on a pallet of dingy rags. The moment I saw the man a strange thrill took possession of me, and I recalled Steve Morgan's description of the owner of the poisoned arrow.

When I had dressed the wounds made by the heavy wheels of the cart, and had my patient sitting up, with a hot drink before him and his long dark fingers encircling the glass, I asked him who and what he was.

"I'm a Bushman," said he with a chuckle; and then, seeing the look of

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disbelief that I exhibited, he went on: "You don't think so? I can prove it. Look here."

He leaned toward his pallet and to my utter astonishment took from beneath the pillow of rags a bow and two arrows. I could not repress a cry of amazement, and did not try. The dark-faced little man was holding the arrows toward me, and I could see that they were exactly like the one which had killed Brant Durivage.

"I had three, but I lost one some time ago," continued my patient. "Where did I lose it? Never mind that, doctor. I could go back to the spot, but I will not. Ho, ho. He knew what it was all the time. My little arrows are more dangerous than they look. I prick your hand with one, and all your skill will not save your life. The marurn tree grows nowhere but among the Bojesmen, the little men of South Africa. It looks like your elm, but it has many thorns. Its leaves are the homes of the grub that builds houses like the silkworm. When we want poison for our arrows we take a grub between thumb and finger and make it shed its greenish fluids upon the ivory head of the shaft. That is all. The marurn grub is death. How does the victim die, eh? He writhes in agony. He becomes a giant in his madness. He has few lucid intervals. It is terrible, ho, ho!"

I was holding one of the arrows in my hands.

"What do you call your poison?" I asked, looking up into his face, which had the leer of a fiend incarnate.

"K'aa," answered the little man, with a laugh. "Some people call it N'gwa, but K'aa is its name."

I was calm now.

"And its antidote?" I said.

"We seldom tell that it has one," grinned the stranger. "But I'll tell you, doctor. The antidote is Kala haetlwe, the product of a small plant that in our country bears little star-shaped flowers."

The man on the pallet allowed his gaze to wander from my face to the arrows. He seemed to be rejoicing in spirit over some stirring event.

"Your lost arrow is in my office," I said, fixing my eyes on the man. "I took the ivory head from Brant Durivage's back. I now know why he wrote 'K'aa, K'aa!' on the wall and died crying 'Kala haetlwe.'"

The man from South Africa fell back and regarded me with gaping mouth.

"Why didn't he let me alone in my love affair?" he exclaimed. I told him that if he took Mina away from me I'd follow him all over the world with my arrow tipped with K'aa. He would not take my warning and I was forced to keep my word. Did he die hard, doctor?

The next day I wrote Steve Morgan down in Shropshire all about my startling discovery, and when I sent an officer to look after my patient he was found to have gashed his throat with one of his own arrows, and in an hour was dead. In course of time, I am pleased to relate, Steve and Annie became man and wife, but I am told that for many years on the wall of a certain room in Shropshire was to be seen this singular, thrilling inscription:

"K'AA — K'AA — K'AA." — The Home Magazine.

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Coughs & Colds **R. Hall's Pulmonary Balsam.** Cured with



## DOMESTIC ECONOMY.

## Domestic Hints.

**STUFFED FIGS.**—Ingredients: One pound of figs, and two cups of the cream mixture described in the foregoing recipe. For this purpose the smallest kinds of "pulled" figs are the best in shape. Split the figs half way through and fill with the cream. Some persons put a nut meat in each fig with the cream. Almonds are liked for this purpose.

**CHICKEN SOUFFLE.**—Make one cup of cream sauce and season with parsley chopped fine and a little onion juice. Stir into this one-half cup of chopped chicken and one-half cup of chopped mushrooms. When it is hot add the beaten yolks of two eggs. Cook one minute and put away to cool. When cool stir in the whites of the eggs well beaten. Bake twenty minutes in a buttered dish.

**BROILED SWEETBREADS.**—Let the sweetbreads stand in cold water one hour, then transfer to boiling water into which has been put one spoonful of salt, and one tablespoonful of lemon juice or vinegar. Boil twenty minutes, remove, and plunge in cold water to stiffen. When cold, wipe, and rub salt and pepper on it. Wrap in one thickness of wrapping paper, and broil ten minutes. Butter and serve.

**BROWN STEW.**—Two pounds of veal from the knuckle or the breast. Cut the meat into bits and roll in flour. Put two tablespoonfuls of chopped veal suet into a pan; when hot, put in the meat and stir constantly until lightly browned. Draw the bits to one side, add two tablespoonfuls of flour to the fat, mix and add one pint of water; stir constantly until it boils; add a teaspoonful of salt, a dash of pepper, a slice of onion, a teaspoonful of kitchen bouquet and a bay leaf. Cover and simmer gently for an hour.

**CHOCOLATE CREAM.**—Soak one-half box gelatine in one-fourth pint of cold water for two hours. Put one pint of milk on the fire, and add one ounce grated chocolate thoroughly dissolved in one tablespoonful of boiling water mixed with two tablespoonfuls of sugar. Stir into the hot milk until smooth. Beat the yolks of three eggs with one-fourth cup of sugar; add to the gelatine, and stir in the milk. Cook three minutes longer, stirring constantly. On taking from the fire add one teaspoonful vanilla and a pinch of salt. Strain and turn into moulds. Serve with a custard or cream and sugar.

## Hints to Housekeepers.

Never salt vegetables until they are nearly cooked; it hardens them.

When pepper is used, it should always be white pepper, especially in white sauces and soups.

The water vegetables are boiled in may be utilized in making sauces and soups; the best of the vegetables goes into it.

To salt almonds, shell and blanch them, spread them on a bright tin pie plate, add a piece of butter the size of a hickory nut and set them in a hot oven until they are of a golden-brown hue. Remove them from the oven, stir well, dredge thickly with salt and turn them out to cool.

By putting lace handkerchiefs in warm water in which are a few drops of ammonia and using castile soap they are easily washed, and made a beautiful clear white. Then do not iron, but spread the handkerchief out smoothly on marble or glass, gently pulling out or shaping the lace. Just before it is entirely dry fold evenly and smoothly, and place under a heavy weight of some kind. Treated in this way handkerchiefs will last thrice as long.

Peppermint drops are quite different from peppermint creams. To make them, boil together for five minutes one cupful of granulated sugar and one-fourth cupful of water. Do not stir this while it cooks. At the end of five minutes, remove from the fire, add one-half teaspoonful of peppermint extract

and stir rapidly. As soon as it begins to whiten, drop very quickly from a spoon on buttered papers. Rapid action is necessary here, else the mixture will harden while still in the saucepan.

A strong marking ink, or black dye, which will resist much exposure to the weather, is made as follows: Take gum arabic, ten pounds; logwood liquor (specific gravity 1.37) twenty fluid ounces; bichromate of potash two and a half ounces, with water sufficient to dissolve the bichromate. Dissolve the gum in one gallon of water, strain, add the logwood liquor, mix, and let the mixture stand for twenty-four hours; then stir in rapidly the bichromate solution and add a little nitrate of iron and fustic acid. If too thick, thin with lukewarm water.

To boil potatoes, select potatoes of uniform size, wash and pare thinly, cover with boiling water and cook half an hour; when nearly done add salt. As soon as done drain from the water and set the saucepan where the potatoes can steam for a few minutes. They should be served immediately, and never allowed to remain in the water a moment after they are cooked. Potatoes are much better steamed with their skins on than boiled, as they then retain all the potashes. When they are old they should be washed, pared and covered with cold water, and allowed to stand for several hours before either boiling or frying.

Hairbrushes may be thoroughly and quickly dried after washing—and that, too, without injuring the bristles—by being briskly brushed with a stiff whisk broom. A similar implement may also be advantageously used in drying the hair, the method being to hold up a few strands at a time and fan them with the broom, simultaneously drawing the latter through the strands like a comb. Of course, it is highly important that the broom should be immaculately clean, and that it should not be used so vigorously as to break or split the hair.

To make a chestnut souffle, boil a pint of shelled chestnuts in salted water until they are soft. Drain them, remove the brown skins and rub them through a sieve. Cream together half a cupful of sugar and four tablespoonfuls of butter. Add to the mixture the chestnut paste, the beaten yolks of four eggs, half a cupful of bread-crumbs, a cupful of milk and the juice and grated rind of one lemon. Beat all together thoroughly. Then fold in the stiffly beaten whites of four eggs. Turn into a buttered mould and bake for fifteen or twenty minutes. Serve with sugar and cream.

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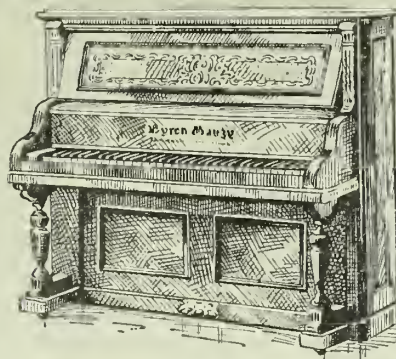
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## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, March 12, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday.....	76 3/4 @ 76 3/4	77 1/4 @ 76 3/4
Thursday.....	76 3/4 @ 76 3/4	77 1/4 @ 76 3/4
Friday.....	76 3/4 @ 76 3/4	76 3/4 @ 76 3/4
Saturday.....	77 @ 76 3/4	77 1/4 @ 76 3/4
Sunday.....	78 1/4 @ 76 3/4	78 1/4 @ 76 3/4
Tuesday.....	77 1/4 @ 76 3/4	77 1/4 @ 76 3/4

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday.....	44 1/4 @ 44 1/4	35 1/2 @ 35 1/2
Thursday.....	44 1/4 @ 44 1/4	35 1/2 @ 35 1/2
Friday.....	44 @ 44 1/4	35 1/2 @ 35 1/2
Saturday.....	44 1/4 @ 44 1/4	35 1/2 @ 35 1/2
Sunday.....	44 1/4 @ 44 1/4	35 1/2 @ 35 1/2
Tuesday.....	44 1/4 @ 44 1/4	35 1/2 @ 35 1/2

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 12 @ 1 11 1/2	1 08 @ 1 09
Friday.....	1 12 1/4 @ 1 13 1/4	1 09 1/4 @ 1 10
Saturday.....	1 13 1/4 @ 1 13 1/4	1 10 1/4 @ 1 10 1/4
Sunday.....	1 13 @ 1 12 1/2	1 09 1/4 @ 1 09 1/4
Tuesday.....	1 12 @ 1 12 1/2	1 09 1/4 @ 1 09 1/4
Wednesday.....	1 12 1/4 @ 1 12 1/2	1 09 1/4 @ 1 09 1/4

## WHEAT.

There is less hurry about getting wheat to sea, now that the time for assessing for taxes has gone by. There has been a fair inquiry from buyers, however, with no very heavy offerings and absence of undue selling pressure a noticeable feature. Despite the generally good prospects in the greater part of the State for the coming crop, the market has presented a tolerably firm tone, the existing firmness being about as much due to outside as to local influences, the markets East and in Europe having inclined lately more in favor of the selling than of the buying interest. Stocks of wheat in Port Costa and Stockton warehouses are nearly 33 per cent lighter than a year ago, while the supply of deep sea vessels available for grain loading is considerably over a third heavier than at corresponding date last year. The freight market is showing a little more steadiness, in consequence of the improved crop prospects, but is not quotable over 25 shillings per ton for desirable iron ships, usual voyage to Europe. There is ocean tonnage now in sight sufficient to carry nearly 400,000 tons of wheat, while at Port Costa, the principal loading point of the California grain fleet, and the only place in the State available for deep water ships where wheat is carried in noteworthy quantity, there was less than 45,000 tons of wheat on the 1st inst., and only 35,670 tons in Stockton warehouses. There should be a good demand for wheat at this port during the balance of the season.

California Milling.....	1 12 1/4 @ 1 15
Cal. No. 1 shipping, alongside.....	1 10 @ 1 12 1/4
Oregon Valley.....	1 10 @ 1 12 1/4
Washington Blue Stem.....	1 10 @ 1 15
Washington Club.....	1 07 1/4 @ 1 10
Off qualities wheat.....	1 15 @ 1 07 1/4

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	6s 2 1/4 @ 6s 3 1/4	6s 3 1/4 @ 6s 4 1/4
Freight rates.....	37 1/4 @ 38 1/4	25 @ 26
Local market.....	96 1/4 @ 98 1/4	1 10 @ 1 12 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.11 1/2 @ 1.13 1/2.
December, 1902, delivery, \$1.08 1/2 @ 1.10 1/2.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.09 1/2 @ 1.09 3/4; May, 1902, \$1.12 1/2 @ 1.12 3/4.

## FLOUR.

Values remain remain quotably in same position as previously noted, and are on a rather low plane, according to prices now ruling for wheat. Supplies of flour in this center are of fair volume, and include considerable quantities from points outside the State. Trade is far from active, but is showing some improvement on the dull state lately experienced, and there is strong probability of there being still better demand in the near future.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

## BARLEY.

Market has not been particularly active since last review, but this was more due to limited offerings than to light inquiry. In addition to the recent fairly liberal shipments by steamer to Australia, a sailing vessel is taking a full cargo of barley for above destination. Feed descriptions are not being offered freely, and being by long odds the cheapest grain now obtainable, there is a very fair demand on local account. While quotable values have been without very radical change, the general drift of values has been in favor of the selling interest.

Feed, No. 1 to choice.....	92 1/4 @ 95
Feed, fair to good.....	90 @ 92 1/4
Brewing, No. 1 to choice.....	97 1/4 @ 1 00
Chevalier, No. 1 to choice.....	1 10 @ 1 17 1/2
Chevalier, poor to fair.....	92 1/4 @ 1 05

## OATS.

Market continues to present a firm tone, with arrivals and offerings light. Spot supplies are largely in few and strong hands. Holders are looking for heavy requisitions from the Government in the near future, and to this is largely attributable the existing firmness. If there were only local demand to be satisfied, it is doubtful if present prices could be maintained.

White Oats, fancy feed.....	1 40 @ 1 45
White, good to choice.....	1 35 @ 1 40
White, poor to fair.....	1 27 1/4 @ 1 32 1/4
Gray, common to choice.....	1 27 1/4 @ 1 35
Milling.....	1 37 1/4 @ 1 42 1/2
Surprise, good to choice.....	1 45 @ 1 50
Black Russian.....	1 15 @ 1 32 1/4
Red.....	1 22 1/4 @ 1 40

## CORN.

Domestic product is arriving a little more freely, but stocks are far from heavy, nor are there evidences of any great pressure to realize, especially on desirable qualities. Values remain quotably about the same as last noted, with firmness more pronounced for the time being on Yellow than on White corn.

Large White, good to choice.....	1 35 @ 1 45
Large Yellow.....	1 35 @ 1 45
Small Yellow.....	1 45 @ 1 50

## RYE.

Offerings are not now very heavy, and holders are contending for higher figures than have been lately current.

Good to choice.....	92 1/4 @ 97 1/4
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## BUCKWHEAT.

No recent transfers have been reported from first hands. In consequence of the existing dullness, values at present are largely nominal.

Good to choice.....	1 55 @ 1 70
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## BEANS.

There has been no very brisk trading in beans since last review, and inquiry was directed more to colored than to white varieties. Attention was given more particularly to Pinks, which are ruling slightly firmer in consequence of the improved demand. Values now current for Pinks are by no means high, and there is little probability of their soon ruling materially lower, with a possibility of further hardening. Offerings of white beans are principally Large Whites or Lady Washingtons, and extreme quotations for these are not readily realized. Limas are not in large spot supply, but are inclining slightly in favor of buyers.

Pea, fair to good, 100 lbs.....	3 50 @ 4 00
Small White, good to choice.....	3 00 @ 3 25
Lady Washington.....	2 65 @ 2 90
Pinks.....	1 95 @ 2 20
Bayos, good to choice.....	2 35 @ 2 50
Reds.....	2 50 @ 3 00
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	4 40 @ 4 50
Black-eye Beans.....	3 50 @ 3 75
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

## DRIED PEAS.

While there is some inquiry for Dried Peas, the views of buyers are as a rule too far under the ideas of holders for much business to be effected. It is the impression, however, that all offerings of desirable quality will be accommodated with custom during the next few months at or close to current quotations.

Green Peas, California.....	1 50 @ 2 00
Nites Peas.....	1 75 @ 1 80

## WOOL.

Owing to the recent stormy weather, spring shearing has been delayed and the clip will be somewhat later coming forward than ordinarily. There was a little shearing done in the lower San Joaquin the latter part of February, and others made arrangements to have their sheep shorn before this, but had to postpone on account of the weather. Although much of the spring clip will likely prove rather ordinary in consequence of the dry weather in the early part of the season, offerings are likely to meet with prompt attention and to command good figures, considering the quality of the wool. Quotations below are for last year's wool and are wholly nominal at this date.

## SPRING.

Southern, defective, 7 mos.....	7 @ 8
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	10 @ 12

## FALL.

Humboldt and Mendocino.....	11 @ 12
Northern Mountain, free.....	9 @ 10
Northern Mountain defective.....	8 @ 9
Middle Counties.....	8 @ 10
San Joaquin and Plains.....	6 1/2 @ 8 1/2
San Joaquin Lambs.....	7 1/2 @ 9

## HOPS.

There is no evidence of much doing in this center in a jobbing way and there is practically no wholesale trading. Dealers are quoting 13@17 1/2c, but wholesale transfers cannot be effected at this range of values. While there are few offerings from first hands, buyers do not appear to be anxious to secure them. An Eastern authority cites the situation in New York city as follows: "The market has maintained a firm tone but without much expansion of the trade. Possibly there have been more deliveries to both local and out-of-town brewers, but new business has been on a small scale, buyers resisting the recent advance quite strenuously. The statistical position is so strong, however, that holders are not pressing sales and when goods are sought for they bring full prices. It seems doubtful that over 17c. could be obtained in the open market for the best lots of either State or Pacific coast '01 hops, but we are advised of sales to brewers at 17 1/2@18c., and even up to 18 1/2c, usual terms, for high quality. Other grades range down to 12 1/2c. for common of last crop, 8@11c. for old, and 2 1/2@5c. for old olds, with the market showing increased firmness, especially on nice yearlings which have had a little more demand of late. Transactions in the interior are comparatively few, but this is due largely to the small remaining stocks and strong views of growers."

## HAY AND STRAW.

The weather has been more favorable during the latter part of the week under review for the forwarding and handling of hay than at any previous date during the past fortnight, and more business was transacted. Sales effected were at much the same range of values as previously quoted, but the market could not be termed especially firm, sales at extreme quotations being rather exceptional.

Wheat, good to choice.....	10 00 @ 12 50
Wheat and Oat.....	10 00 @ 12 50
Tame Oat.....	8 50 @ 11 00
Wild Oat.....	8 00 @ 10 50
Barley and Oat.....	8 00 @ 10 50
Alfalfa.....	9 00 @ 11 00
Volunteer.....	6 50 @ 9 00
Compressed.....	10 00 @ 13 50
Straw, 3/4 bale.....	40 @ 60

## MILLSTUFFS.

Market for all descriptions of mill offal has inclined in favor of buyers since last review, being weak at the quotations, with offerings on the increase and the demand not very brisk. Prices for Rolled Barley were well sustained at the quoted advance. Milled Corn was held at practically unchanged figures.

Bran, 1/2 ton.....	15 00 @ 16 00
Middlings.....	17 00 @ 19 00
Shorts, Oregon.....	15 50 @ 16 50
Barley, Rolled.....	20 00 @ 21 00
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

## SEEDS.

Alfalfa is not offering in heavy quantity, and owing to moderate inquiry since the recent rains, is meeting with a tolerably stiff market. Mustard Seed is in too limited supply to admit of regular wholesale quotations. Not much Flaxseed coming forward, and the bulk of that received is being delivered on contracts. Market for Bird Seed is ruling quiet, with stocks and demand both of rather light proportions, and prices without quotable change.

Alfalfa, Cal.....	9 50 @ 10 00
Alfalfa, Utah.....	10 50 @ 11 00
Flax.....	2 40 @ 2 60
Mustard, Yellow.....	— @ —
Mustard, Trieste.....	— @ —

Canary.....	3 1/4 @ 3 1/4
Rape.....	1 1/2 @ 2 1/4
Hemp.....	3 1/4 @ 3 1/4

## BAGS AND BAGGING.

There are no indications of any great amount of business doing in Grain Bags, although it would seem an opportune time for farmers to arrange for the coming season's needs. The chances for the market being more favorable to buyers at harvest time are exceedingly slim. Some inquiry is being made for Wool Sacks on account of spring clip, and business doing is at quotably unchanged rates.

Calcutta Grain Bags, buyer June-July.....	6 1/2 @ 6 1/4
Calcutta Grain Bags, spot.....	6 1/2 @ —
San Francisco Grain Bags, 22x36, spot.....	6 @ 6 1/4
San Joaquin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33

Fleece Twine.....	8 1/2 @ —
Gunlines.....	— @ —
Bean Bags.....	5 1/4 @ 5 1/4
Fruit Sacks, cotton, three sizes.....	5 1/4, 6, 6 1/4
Fruit Sacks, Jute.....	7 @ 7 1/4

## HIDES, PELTS AND TALLOW.

Dry Hides are in good request, and market is firm at full current figures. Wet Salted Hides, other than large and sound, move slowly and market for the ordinary run of offerings inclines against sellers. Sheep Skins are in fair demand at the rates quoted. Tallow is selling at quotably unchanged values.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @ —	9 @ —
Medium Steers, 48 to 56 lbs.....	10 @ —	8 @ —
Light Steers, under 48 lbs.....	8 1/4 @ —	7 1/4 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	8 @ —
Light Cow Hides, under 50 lbs.....	8 1/4 @ —	7 1/4 @ —
Stags.....	6 1/4 @ —	— @ —
Wet Salted Kip.....	9 @ —	7 @ —
Wet Salted Veal.....	9 @ —	8 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ —	14 @ —
Dry Kip and Veal, 11 to 16 lbs.....	14 @ —	12 @ —
Dry Calf, under 4 lbs.....	18 @ —	15 @ —
Salted Horse Hides, large.....	2 75 @ —	— @ —
Salted Horse Hides, medium.....	2 25 @ —	2 50 @ —
Salted Horse Hides, small.....	1 25 @ —	— @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, medium.....	1 50 @ —	— @ —
Dry Horse Hides, small.....	1 00 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 1/2 skin.....	80 @ —	20 @ —
Pelts, medium, 1/2 skin.....	65 @ —	75 @ —
Pelts, short wool, 1/2 skin.....	40 @ —	60 @ —
Pelts, shearing, 1/2 skin.....	15 @ —	30 @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good medium.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/4 @ —	— @ —
Tallow, No. 2.....	4 1/4 @ —	3 1/4 @ —
Goat Skins, perfect.....	30 @ —	37 1/2 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

## HONEY.

While spot stocks are of rather light volume, holders show more inclination to unload than they did a month ago. Although quotable values are without marked change, concessions are granted to buyers which would not have been thought of at the beginning of the year. A large proportion of the honey now offering is Comb of medium grade.

Extracted, White Liquid.....	5 1/4 @ —
Extracted, Light Amber.....	4 1/4 @ 5
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	11 @ 12 1/2
Amber Comb.....	8 @ 10
Dark Comb.....	6 @ 7

## BEESWAX.

Stocks are of small volume, and there is no likelihood of the market being seriously burdened with offerings in the near future. Quotable values remain as last noted.

Good to choice, light, 1/2 lb.....	26 @ 28
Dark.....	24 @ 25

## LIVE STOCK AND MEATS.

Values for Beef of prime to choice quality are being well maintained at the quoted range, although the demand is not at present very active. Mutton is in fair request, Wethers being given the decided preference and commanding the best figures. Lamb continued in light receipt and brought good prices. Veal was not in large stock and choice was favored with a firm market. Hogs sold close to figures of preceding week, but dealers did not take hold freely at full figures, anticipating an easier market at an early day, with increased receipts of dairy hogs.

Beef, first quality, dressed, net 1/2 lb.....	7 @ 7 1/4
Beef, second quality.....	7 @ —
Beef, third quality.....	6 @ 6 1/4
Mutton—ewes, 8@10c; wethers.....	8 1/4 @ 9
Hogs, hard grain fed, 125 to 200 lbs.....	6 @ 6 1/2
Hogs, small, fat.....	6 @ 6 1/2
Hogs, large, hard, over 200 lbs.....	5 1/4 @ 5 1/4
Hogs, soft or acorn fed.....	5 @ —
Hogs, country dressed.....	6 1/4 @ 7
Veal, small, 1/2 lb.....	8 @ 9 1/4
Veal, large, 1/2 lb.....	8 @ 8 1/4
Lamb, spring, 1/2 lb.....	15 @ —

## POULTRY.

Although there were no heavy receipts of poultry of any sort, either domestic or Eastern, the market was less favorable to sellers than preceding week. Retailers experienced trouble in profitably disposing of previously purchased high priced stock, and consequently were slow about buying, even at easier figures than had been ruling. The inquiry which did exist was largely for choice young stock, this description continuing to sell to best advantage.

Turkeys, dressed, choice.....	16 @ 18
Turkeys, alive, Hens, 1/2 lb.....	15 @ 16
Turkeys, alive, Gobblers, 1/2 lb.....	13 @ 14
Hens, California, 1/2 dozen.....	4 50 @ 5 50
Roosters, old.....	4 25 @ 4 50
Roosters, young (full-grown).....	6 50 @ 7 50
Fryers.....	5 50 @ 6 00
Broilers, large.....	5 00 @ 5 50
Broilers, small to medium.....	3 50 @ 4 50



Ducks, old, $\frac{1}{2}$ dozen.....	5 00	@ 6 00
Ducks, young, $\frac{1}{2}$ dozen.....	6 50	@ 8 00
Geese, $\frac{1}{2}$ pair.....	1 50	@ 1 75
Goslings, $\frac{1}{2}$ pair.....	2 25	@ 2 50
Pigeons, old, $\frac{1}{2}$ dozen.....	1 50	@ —
Pigeons, young.....	2 75	@ 3 00

#### BUTTER.

Market is lower, with receipts and offerings on the increase. Buyers have been operating very slowly at the recent comparatively stiff prices, and with little other than local demand for immediate use, no heavy quantities of butter were required to bring about reduced values. No special stability to prices is likely to be experienced until values get down to a packing or cold storage basis.

Creamery, extras, $\frac{1}{2}$ lb.....	25	@ 25
Creamery, firsts.....	24	@ 25
Creamery, seconds.....	23	@ 24
Dairy, select.....	24	@ 25
Dairy, firsts.....	23	@ 24
Dairy, seconds.....	22	@ 23
Mixed store.....	17	@ —
Creamery in tubs.....	—	@ —
Pickled Roll, $\frac{1}{2}$ lb.....	—	@ —
Firkin, California, choice to select.....	—	@ —
Firkin, common to fair.....	—	@ —

#### CHEESE.

While stocks are not heavy, the market is not showing any special firmness, buyers operating slowly at full current figures. A few favorite marks are commanding in a small way an advance on quotable rates.

California, fancy flat, new.....	10	@ 11
California, good to choice.....	9 $\frac{1}{2}$	@ 10 $\frac{1}{2}$
California, fair to good.....	9	@ 10
California, "Young Americas".....	9	@ 11

#### EGGS.

Prices are at a little lower range than last quoted, but demand is active at the reduced figures. Dealers are now storing freely, and will continue to do so for some weeks to come. That prices for good to choice eggs have touched bedrock for the season is generally conceded.

California, select, large, white and fresh.....	14 $\frac{1}{2}$	@ 15
California, select, irregular color & size.....	14	@ 14 $\frac{1}{2}$
California, good to choice store.....	13	@ 14
California, common to fair store.....	—	@ —
Eastern, good to choice.....	—	@ —
Cold Storage.....	—	@ —

#### VEGETABLES.

While the market for fresh vegetables was hardly so favorable to sellers as for a week or two preceding, it was the exception where choice to select qualities did not command comparatively good prices. Many of the Tomatoes offering showed poor quality and on this account had to go at low values. Much of the Summer Squash offering was more or less defective. String beans were scarce and choice commanded high figures. Asparagus sold at a wide range, some fancy from Bouldin Island bringing as much as 30c per pound. Mushrooms were in free receipt, in all kinds of packages, and sold at all kinds of prices. Onion market lacked firmness.

Asparagus, $\frac{1}{2}$ lb.....	10	@ 22 $\frac{1}{2}$
Beans, String, $\frac{1}{2}$ lb.....	12 $\frac{1}{2}$	@ 15
Beans, Wax, $\frac{1}{2}$ lb.....	—	@ —
Cabbage, choice garden, $\frac{1}{2}$ 100 lbs.....	50	@ —
Cauliflower, $\frac{1}{2}$ dozen.....	—	@ —
Cucumbers, Bay, $\frac{1}{2}$ large box.....	—	@ —
Egg Plant, Los Angeles, $\frac{1}{2}$ lb.....	—	@ —
Garlic, $\frac{1}{2}$ lb.....	2	@ 2 $\frac{1}{2}$
Mushrooms, $\frac{1}{2}$ lb.....	10	@ 20
Onions, Yellow Danver, $\frac{1}{2}$ cental.....	1 50	@ 2 15
Peas, Sweet garden, $\frac{1}{2}$ lb.....	6	@ 8
Peppers, Green, Los Angeles, $\frac{1}{2}$ lb.....	12 $\frac{1}{2}$	@ 20
Peppers, Bell, $\frac{1}{2}$ box.....	—	@ —
Rhubarb, $\frac{1}{2}$ lb.....	8	@ 10
Squash, Marrowfat, $\frac{1}{2}$ ton.....	9 00	@ 10 00
Summer Squash, $\frac{1}{2}$ box.....	1 00	@ 1 50
Tomatoes, Los Angeles, $\frac{1}{2}$ box.....	1 00	@ 1 50

#### POTATOES.

Choice potatoes for table use were in fairly active request on local account, and commanded fully as good figures as at any previous date for several months past. As the early crop of potatoes in this State will in all probability be much below the average, on account of recent damage to potato land by overflow, the prospects are favorable for all desirable old stock being wiped out before new will be in sufficient supply to accommodate all buyers. Choice Burbank Seedlings are being taken mainly for table use. There is some inquiry for Early Rose for seed, and with not many offering, they are meeting with a good market, selling in a small way up to \$2 per cental. Sweets were in tolerably large supply for this late date and values for same inclined in favor of buyers.

Burbanks, Salinas, $\frac{1}{2}$ 100 lbs.....	—	@ —
River Burbanks in sacks, $\frac{1}{2}$ cental.....	1 15	@ 1 35
Petaluma and Tomales Burbanks.....	1 40	@ 1 50
Oregon Burbanks.....	1 35	@ 1 75
River Reds.....	1 40	@ 1 50
Sweets, Merced, $\frac{1}{2}$ cental.....	1 50	@ 1 60

#### The Fruit Market.

#### FRESH FRUITS.

The market for fresh deciduous fruits presents little of special interest to note. Aside from Apples there is nothing in this line offering at present, and most of the Apples now on market are cold storage supplies. Quotable values for Apples are

without appreciable change, but only for choice to select can the market be said to show firmness. Some of fancy quality, held in cold storage, are limited to higher figures than are quotable. Strawberries are looked for in quotable quantities in about a week.

Apples, fancy, $\frac{1}{2}$ 4-tier box.....	1 75	@ 2 25
Apples, good to choice, $\frac{1}{2}$ 50-lb. box.....	1 00	@ 1 50
Apples common to fair, $\frac{1}{2}$ 50-lb. box.....	50	@ 75

#### DRIED FRUITS.

The market for evaporated and dried fruits has been rather quiet the current week, the volume of business proving lighter than for a fortnight or more preceding, but it is not considered probable that inactivity will be a conspicuous feature of the market for any very prolonged period. With only very limited stocks of most descriptions, holders are showing no uneasiness, feeling confident that there will be an outlet at full current rates or better for all remaining supplies of 1901 crop before the coming season's product will be available for distribution. The light business for the time being on Eastern account is attributable to the recent rough weather which has been experienced on the Atlantic side and which has greatly restricted trade in all lines. Values throughout are without quotable change, with firmness especially pronounced on apricots, apples, peaches and pears of choice to select qualities. Nectarines are in such light stock as to be hardly deserving at this date of a wholesale quotation. Market for old Prunes or 1900 stock is not noteworthy for firmness, but is still quoted at 2  $\frac{1}{2}$ @3c for the four sizes, with existing supplies of old prunes materially larger than of 1901 fruit. Last year's Prunes are being steadily held on the 3  $\frac{1}{2}$ @3  $\frac{1}{2}$ c basis for the four sizes, and no fears are entertained of there being any necessity for carrying over 1901 stock into the coming season.

#### EVAPORATED OR BLEACHED.

Apricots, Royal, choice, in sacks, $\frac{1}{2}$ lb.....	9	@ 9 $\frac{1}{2}$
Apricots, Moorpark.....	10	@ 12
Apples, in 50-lb boxes, rings, pressed, fancy.....	8 $\frac{1}{2}$	@ 8 $\frac{1}{2}$
Apples, 50-lb boxes, rings, pressed, good to choice.....	7	@ 8
Nectarines, $\frac{1}{2}$ lb.....	5 $\frac{1}{2}$	@ 6 $\frac{1}{2}$
Peaches, unpeeled, fancy.....	8	@ 9
Peaches, unpeeled, choice.....	6 $\frac{1}{2}$	@ 7 $\frac{1}{2}$
Peaches, peeled, in boxes.....	12	@ 14
Pears, halves, choice to fancy.....	7	@ 10
Plums, Red and Black, pitted.....	5 $\frac{1}{2}$	@ 6 $\frac{1}{2}$
Plums, White and Yellow.....	5 $\frac{1}{2}$	@ 6 $\frac{1}{2}$
Prunes, 4 sizes, in bags, 3 $\frac{1}{2}$ @3 $\frac{1}{2}$ c; 50-60s, 4 $\frac{1}{2}$ @4 $\frac{1}{2}$ c; 60-70s, 4 $\frac{1}{2}$ @4 $\frac{1}{2}$ c; 70-80s, 3 $\frac{1}{2}$ @3 $\frac{1}{2}$ c; 80-90s, 3 $\frac{1}{2}$ @3 $\frac{1}{2}$ c; 90-100s, 3c@—; these figures for 1901 crop.	—	@ —

#### COMMON SUN-DRIED.

Apples, sliced.....	4	@ 5
Apples, quartered.....	5 $\frac{1}{2}$	@ 5 $\frac{1}{2}$
Peaches, unpeeled.....	6	@ 6 $\frac{1}{2}$
Pears, prime halves.....	5	@ 5 $\frac{1}{2}$
Plums, unpitted, $\frac{1}{2}$ lb.....	1 $\frac{1}{2}$	@ 2 $\frac{1}{2}$

#### RAISINS.

Trade is slow, but offerings are light and are principally loose Muscatels. While quotable values are nominally the same as last noted, current asking figures would have to be shaded fully  $\frac{1}{2}$ c to effect transfers of noteworthy magnitude. Seedless Raisins are in very light stock and prospects are that remaining supplies will be soon wholly wiped out.

Following are the prices for 1901 crop in carload lots:

Loose Muscatels—	Per lb.
4-crown.....	6 $\frac{1}{2}$
3-crown.....	6
2-crown.....	5 $\frac{1}{2}$
Seedless Muscatels.....	5 $\frac{1}{2}$
Seedless Sultanas.....	5 $\frac{1}{2}$
Thompson's Seedless.....	6 $\frac{1}{2}$
Seeded—	
3-crown, 1-lb. carton.....	7 $\frac{1}{2}$ @ 8
2-crown, 1-lb. carton.....	6 $\frac{1}{2}$ @ 6 $\frac{1}{2}$
London Layers, 20-lb. boxes—	
2-crown.....	—
3-crown.....	—

#### CITRUS FRUITS.

Oranges are in greatly reduced supply, with present offerings almost entirely Navels and few of those of high grade. Market for desirable qualities inclined in favor of the selling interest, although the quotable range of values remained practically as last noted. Lemons were in heavy supply, especially ordinary qualities, and for other than most select the market was dull and weak. Limes were in better supply than preceding week, but were held at much the same figures then quoted.

Oranges—Navels, $\frac{1}{2}$ box.....	1 50	@ 3 00
Mediterranean Sweets, per box.....	—	@ —
St. Michael.....	1 50	@ 2 00
Maita Blood.....	—	@ —
Tangerine, as to size of box.....	1 00	@ 2 00
Seedlings, $\frac{1}{2}$ box.....	1 25	@ 1 75
Lemons—California, select, $\frac{1}{2}$ box.....	2 25	@ 2 50
California, good to choice.....	1 50	@ 2 00
California, common to fair.....	75	@ 1 25
Grape Fruit, $\frac{1}{2}$ box.....	1 25	@ 2 50
Limes—Mexican, $\frac{1}{2}$ box.....	6 00	@ 7 00

#### NUTS.

Almonds are in light supply and in few hands, and for desirable qualities current values are being well maintained. Of No. 1 soft shell Walnuts there are few remaining, and market for same is firm at the values quoted. Peanut market is ruling

steady, with stocks moderate and demand fair.

California Almonds, shelled.....	15	@ 18
California Almonds, paper shell, $\frac{1}{2}$ lb.....	10	@ 13
California Almonds, soft shell.....	8	@ 10
California Almonds, hard shell.....	5	@ 6
Cal. White Walnuts, No. 1 soft shell.....	10	@ 11
Cal. White Walnuts, No. 2 soft shell.....	8	@ 9
Cal. White Walnuts, No. 1 hard shell.....	9	@ 10
Cal. White Walnuts, No. 2 hard shell.....	7	@ 8
Peanuts, California, fair to prime.....	4 $\frac{1}{2}$ @ 5 $\frac{1}{2}$	
Peanuts, Eastern, hand-picked.....	5 $\frac{1}{2}$ @ 6	
Pine Nuts.....	5	@ 6

#### WINE.

Business in the wholesale market is not of large volume, due as much to limited offerings as to any other cause. Dry wines of 1901 vintage are quotable wholesale at 22@26c per gallon, with very little obtainable at the inside figure, and not much readily salable at the extreme quotation noted. It is seldom that large buyers name over 24c, and then only for exceptionally choice qualities. Receipts of wine at this port in February were 1,545,200 gallons, as against 2,082,000 gallons in February, 1901, and 1,348,200 gallons in February, 1900. Moderate quantities of wine, mostly blended stock, are moving outward both by sea and rail.

#### Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, $\frac{1}{2}$ sacks.....	140,503	4,900,737
Wheat, centals.....	308,159	7,537,029
Barley, centals.....	80,146	5,151,902
Oats, centals.....	3,639	719,850
Corn, centals.....	3,338	82,831
Rye, centals.....	1,530	188,741
Beans, sacks.....	13,580	600,312
Potatoes, sacks.....	19,430	1,069,031
Onions, sacks.....	2,214	165,757
Hay, tons.....	1,991	105,862
Wool, bales.....	216	43,955
Hops, bales.....	231	8,463

#### EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, $\frac{1}{2}$ sacks.....	127,284	3,574,782
Wheat, centals.....	360,681	7,051,451
Barley, centals.....	27,715	3,765,754
Oats, centals.....	200	2,407
Corn, centals.....	—	8,908
Beans, sacks.....	291	20,279
Hay, bales.....	—	11,844
Wool, pounds.....	—	545,331
Hops, pounds.....	—	470,962
Honey, cases.....	59	5,742
Potatoes, pack's.....	177	42,673

#### California Dried Fruit at New York.

NEW YORK, March 12.—Evaporated apples, common, 7@8  $\frac{1}{2}$ c; prime wire tray, 9  $\frac{1}{2}$ @9  $\frac{1}{2}$ c; choice, 9  $\frac{1}{2}$ @10c; fancy, 10  $\frac{1}{2}$ @11c.  
California Dried Fruits.—Stocks and offerings are light, and market firm at current rates.  
Prunes, 3  $\frac{1}{2}$ @7c.  
Apricots, Royal, 10@13c; Moorpark, 11@14c.  
Peaches, unpeeled, 8@10c; peeled, 14@18c.

#### New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING FEBRUARY 25, 1902.
694,234.—SASH FASTENER—W. W. Battles, San Jose, Cal.
693,943.—FLYING MACHINE—W. J. Bell, Los Angeles, Cal.
693,944.—RAILWAY SWITCH—W. J. Bell, Los Angeles, Cal.
694,242.—WAVE MOTOR—W. Borchart, Carson City, Nev.
693,827.—TRACE BUCKLE—S. Boyer, Colfax, Wash.
694,247.—TREE SUPPORT—T. P. Brown, Riverside, Cal.
694,002.—MINING ELEVATOR—H. W. Davis, Auburn, Cal.
694,005.—CONCENTRATOR—W. G. Dodd, S. F.
694,060.—CUTTER HEAD—C. E. Hawley, Berkeley, Cal.
694,274.—PROPELLER—B. T. Herold, Vallejo, Cal.
694,290.—AMALGAMATOR—M. Lasswell, Spokane, Wash.
694,311.—PUSH BUTTON—Laughlin & Schuyler, Los Angeles, Cal.
694,063.—PIN FASTENER FOR SHOW CARDS—L. Lemos, S. F.
694,064.—SUSPENDER CLAMP—L. Lemos, S. F.
694,103.—MANIFOLD BOOK—A. Levison, S. F.
694,212.—PRESERVING WOOD—I. B. Sprague, Everett, Wash.
693,988.—CAR TROLLEY—E. W. Taylor, Spokane, Wash.
694,219.—MAIL BOX—W. L. Vestal, San Bernardino, Cal.
694,042.—BREAD TOASTER—R. C. Vroom, San Diego, Cal.
693,938.—OIL BURNER—G. E. Witt, Fresno, Cal.

#### Never Had a Complaint.

Buffalo, Mo., Feb. 19, 1902.  
The Lawrence-Williams Co., Cleveland, O.:  
Upon seeing your ad in the American Druggist, we applied for some of your pictures. We are the only people in town handling the GOMBAULT'S CAUSTIC BALSAM, but we never had a single complaint on its account.  
DR. A. M. JONES, Druggist.

Telephone Main 199.  
**Blake, Moffitt & Towne,**  
DEALERS IN PAPER,  
Nos. 55-57-59-61 First St., San Francisco, Cal.  
BLAKE, MOFFITT & TOWNE, Los Angeles.  
BLAKE MOFFATT & CO., Portland, Or.

## Roofing Cost

Every builder should consider well the cost of roofing.

There is no economy in a cheap roof, for it is only a question of time until needed repairs double the original cost.

The first cost of P & B Ready Roofing may be a trifle higher than other roofings, but the first cost is the end of your investment.

P & B Roofs out last and out wear all other roofs. Heat, cold, snow, rain, wind, acids, fumes, smoke or anything else will not injure P & B Roofs—it lasts as long as the building and is far cheaper in the long run.

Send for booklet—address Dept. R.

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116 Battery Street, San Francisco  
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## PATENTS

Our U. S. and Foreign Patent Agency presents many and important advantages as a Home Agency over all others, by reason of long establishment, great experience, our Washington branch which tends exclusively to our business before the Patent Office, intimate acquaintance with the subjects of inventions in our own community, and our most extensive reference library, containing official American reports since 1790, with full copies of U. S. Patents since 1872. All worthy inventions patented through DEWEY, STRONG & CO.'S Patent Agency will have the benefit of a description in the *Mining and Scientific Press*. We transact every branch of patent business, and obtain patents in all countries which grant protection to inventors. The large majority of U. S. and foreign patents issued to inventors on the Pacific Coast have been obtained through our agency. We are conservative and counsel preliminary examinations in cases of doubtful novelty. Guide to inventors sent on request.

## DEWEY, STRONG & CO.

(ESTABLISHED 1860.)  
PATENT AGENTS,  
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—AND—  
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## The Fresno Scraper.

3  $\frac{1}{2}$ —4—5 Foot.



FRESNO AGRICULTURAL WORKS,  
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### BEST IN THE WORLD.

Dr. B. J. Kendall Co., Genl. Agents—1 have the honor to inform you that your Kendall's Spavin Cure is the best liniment, I believe, in the world. I have been a Farrier in the United States Army for 14 years, and have never used anything to equal it. I had a horse with hip-joint lameness, a spavin, swollen glands and shoulder lameness. I used two bottles of your Spavin Cure and they are sound and well.

Yours truly respectfully,  
SILAS JOHNSON, Farrier.

It is an absolutely reliable remedy for Spavins, Splints, Curbs, Ringbones, etc. Removes the blemish and leaves no scar. Price, \$1; six for \$5. As a liniment for family use it has no equal. Ask your druggist for KENDALL'S SPAVIN CURE, also "A Treatise on the Horse," the book free, or address  
DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.

## THE IRRIGATOR.

### Irrigation in Santa Clara.

From a paper by PROF. C. W. CHILDS at the San Jose Farmers' Club.

The average rainfall in Santa Clara valley is about 13 inches. A much larger amount is recorded in the mountains and foothills surrounding the valley. The greater part of this rainfall occurs in the period of time between November 15 and April 15, a rainy season of about five months.

A considerable amount of this rain water, especially that which falls in the hills and mountains, evaporates or runs off through the river channels to the bay—some as surface water and some through the deep gravel beds which underlie the valley.

As the forests on the adjacent hills and mountains are destroyed the surface drainage becomes more rapid and destructive.

**THE WATER LEVEL.**—The water level in this valley is gradually lowering. Within a radius of 3 miles from my home the water level has fallen 8 or 10 feet during the past twenty years. Dissipation of water in various ways is increasing, but the average rainfall does not increase—in fact, it is probably decreasing. The need of more water to assist in producing good crops for the farmer and the orchardist in valley is painfully apparent.

Santa Clara valley in climate, soil and location is supremely blest. Many who have traveled extensively declare that this is the loveliest valley on earth. It has one defect, however, which greatly retards the prosperity of its people—an insufficient rainfall. In wealth of agricultural products we shall soon fall behind the region north of San Francisco bay, which has a greater rainfall, and the region south of us, where irrigating canals are large and numerous, unless we make use of the irrigating possibilities within our grasp. Rivers of agricultural wealth are now flowing through our valley, and wasting their richness in San Francisco bay. Future generations will profit by the sedimentary deposits of these streams and the present generation ought to be wise enough to utilize some of this liquid gold.

In all parts of the world water controls the development of the country, and it is surely the part of wisdom to control the water supply whenever it can be done.

**FOREST PRESERVATION.**—The preservation of our mountain forests and the building of storage reservoirs for storm waters, and ditches to convey the surplus water to our farms and orchards, have received as yet but little attention from the citizens of this country.

A few small ditches has been made by people living near some of the streams which flow through this valley. These ditches are sources of great profit to their owners, but they are too small and too much restricted by riparian rights and other customs to be of great public value.

I own a number of shares of stock in the Pioneer Ditch Co. About eight

years ago thirty persons whose farms border on the east side of Guadalupe creek organized a company, incorporated and proceeded to build a ditch. After the usual troubles and delays incident to co-operative work the ditch was completed, and was named the Pioneer ditch. This ditch takes its water from Almaden creek a short distance above the junction of Almaden and Guadalupe creeks. It is about 4 miles in length and its original cost was about \$5000. In a season of average rainfall we have more water than we desire to use, at a cost of about one-tenth the amount that was formerly paid for pumping. This creek water is also better for irrigation purposes than well water. It is warmer than well water and contains considerable sediment which is a good fertilizer.

**BEDROCK DAM.**—If we could build a bedrock dam a mile or two above the head of this dam, there would always be enough water to fill this ditch from November to July. I believe that the best results from irrigation can be obtained by using water during the rainy season. Under the customs and laws now in force we cannot increase the capacity of this ditch to any great extent, and persons whose land does not border on this creek cannot use any of the vast amount of water this stream is now carrying away to the bay. With proper legal enactments two canals, one on each side of the creek, could be constructed and sufficient water diverted from these streams—Almaden and Guadalupe—to irrigate a region of country 2 or 3 miles wide and 7 or 8 miles long. Similar canals might be made along other creeks flowing through this valley. Storage reservoirs can be made at various points in the foothills. I know of several good sites for such reservoirs on three of these streams.

**SOME OBJECTIONS.**—Some persons object to the building of reservoirs and canals in this county because they think

that the artesian wells in the lower part of the valley would be cut off from their usual supply of water, and others are not interested because they think that their farms and orchards do not need irrigation. A system of reservoirs and canals could be constructed in such places and in such a manner as not to interfere with the water supply of the artesian region.

These works would impound and distribute the storm water that now flows off to the sea in the rainy season. As I write this paragraph I look out upon the Guadalupe and see this creek nearly bank full of rich sediment water flowing away to the bay. Much of this good water ought to be flowing around on the surface of the land on both sides of this creek. I do not believe that there is an orchard in this valley which would not at some time be benefited by a flooding with creek water.

## Sharples "Tubular" Dairy Separators.

If no agent will bring you a Sharples Separator we will loan you one for trial **FREE OF COST.**

They give more butter than any other separator, enough to pay big interest on the whole first cost, and they turn much easier, besides being entirely simple, safe and durable. (Former capacity doubled, with less driving power.)

Improvements come fast here. We have been making superior separators for 19 years (longest in America) and are proud of them, but these new "Tubular" discount anything either ourselves or anyone has ever made. Free Book, "Business Dairying," and Catalogue No. 131.

Sharples Co., Chicago, Ills. P. M. Sharples, West Chester, Pa.

## SPRINGTIME

is the time to place these supports on your trees.



Don't wait until your trees are bent out of shape and broken with weight of fruit. Cheaper than the cheapest. Economical, durable, perpetual.

HOYT'S PROPLESS TREE PROP,  
WATSONVILLE, CAL.

AGENTS WANTED.

## THE "BOSS" TREE PROTECTOR.

Made of Yucca Palm. Is cheap, durable, and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn, grasshoppers or dry winds. Can be easily removed; will last for years.

Send for samples.

### PRICES:

12 inches long,	\$ 9.00	per 1000.
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16 "	11.50	" "
18 "	12.50	" "
24 "	15.00	" "
30 "	17.50	" "

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Sole Agents, - No. 193 California Street,  
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sore neck, sore back, &c., resulting from collar, saddle or harness galls and chafing, and all forms of canker, callous, &c., are instantly relieved and cured with

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Tuttle's Elixir Co., 38 Beverly St., Boston, Mass.  
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Beware of so-called Elixirs—none genuine but Tuttle's. Avoid all bilayers; they offer only temporary relief if any.

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Tankages,  
Fish Scrap,  
Steamed Bone Meal,  
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Also Mixed Fertilizers of every description. We guarantee all our goods. Get our prices before ordering.

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Oats, Wheat,  
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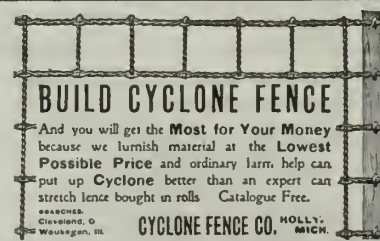


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## PAGE

## IN THE WORST

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Alfalfa, Clover, Brome Grass, Australian Rye Grass, Garden and Flower Seeds.  
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Muir Peaches.  
Almonds—1 X L, Nonpareil and Ne Plus Ultra.  
Apples—Yellow Newtown Pippin and Bellflower.  
Pear—Bartlett.  
Sugar Prune.  
Mammoth Blackberry.

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Rooted Tips, 12 for \$1; 100 for \$6; 1000 for \$50.  
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4 to 6 ft. \$12 per 100.

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Evergreen and Deciduous Trees.

ORNAMENTAL TREES AND FLOWERING SHRUBS.

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PRICE, 2 CTS. EACH.  
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ESTABLISHED IN 1865

**80 Acres in Nursery.**  
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**SUGAR PRUNES** on Plum Root,  
5 to 7 feet high, \$15 per 100, \$140 per 1000.

Muir Peaches, Bartlett Pears, Climax Plum and Almond Trees All No. 1 Trees.

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**HANFORD NURSERY, J. W. BAIRSTOW, HANFORD, CAL.**

**SALZER'S SEEDS**

**Beardless Barley**  
is produced in 1901 for Mr. Wells, Orleans Co., New York, 109 bushels per acre. Does well everywhere. That pays.

**20th Century Oats.**  
The oat marvel, producing from 200 to 300 bus. per acre. Salzer's Oats are warranted to produce great yields. The U. S. Ag. Dept. calls them the very best! That pays.

**Three Eared Corn.**  
200 to 350 bus. per acre. Is extremely profitable at present prices of corn. Salzer's seeds produce everywhere. That pays.

**Marvel Wheat**  
yielded in 30 States last year over 40 bus. per acre. We also have the celebrated Macaroni Wheat, which yielded on our farms 63 bus. per acre. That pays.

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Greatest cereal food on earth—80 bus. grain and 4 tons magnificent hay per acre. That pays.

**Victoria Rape**  
makes it possible to grow hogs, sheep and cattle at a cost of but 1c a lb. Marvelously prolific, does well everywhere. That pays.

**Bromus Inermis.**  
Most wonderful grass of the century. Produces 6 tons of hay and lots and lots of pasture besides per acre. Grows wherever soil is found. Salzer's seed is warranted. That pays.

**\$10.00 for 10c.**  
We wish you to try our great farm seeds, hence offer to send 10 farm seed samples, containing Thousand Headed Kale, Teosinte, Rape, Alfalfa, Speltz, etc. (fully worth \$10.00 to get a start) together with our great catalog, for 10c postage.

**John A. Salzer Seed Co. LA CROSSE WIS.**

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## Patrons of Husbandry.

### Tulare Grange.

To THE EDITOR:—There was a pleasant and profitable meeting of this Grange on Saturday, the 1st inst.

After the routine order of business was through, the committee appointed to arrange for a Farmers' Institute on March 21-22 reported progress.

From the College of Agriculture, at Berkeley, there will be present Prof. D. T. Fowler, who will conduct the Institute; R. H. Loughridge, Ph. D., agricultural geologist, and M. E. Jaffa, Ph. B., first assistant chemist in agricultural laboratory.

Prof. Loughridge will lecture on "Soils," and Prof. Jaffa on "Foods and Food Products." There will be meetings each day in forenoon, afternoon and evening; each professor will give two lectures each day. During the Institute Mr. A. J. Pillsbury will deliver an address on "The Work of the Water and Forest Association of California;" Mr. Ben M. Maddox on "What the San Joaquin Valley Commercial Association has Done, Is Doing and Expects to Do;" Dr. John B. Rosson on "The Pathology of Surgical Diseases of Animals;" Prof. C. J. Walker on "The Educational Requirements of the California Farmer;" Mr. P. D. Fowler on "Commercial Fruits Adapted to This Climate and Soil." There will be a question box.

The committee has made every arrangement for a headquarters and rest rooms in the same building in which the Institute will be held for all farmers who bring their families in, with seats and tables for lunches, the committee furnishing hot coffee and tea, families bringing in their own lunches. Washstand, mirror and baby cots are provided. Everything is being provided for the convenience of parents attending the Institute, even to a lady to care for the children while mothers attend the lectures at the Institute. It is expected to organize a class to take a reading course in dairying.

A special committee to arrange rest rooms and for reception was appointed.

The National Grange subject of the day was taken up: "How Can We Secure Greater Equality in the Matter of Taxation?" led by a paper read by Bro. Holcom. The subject was very generally discussed. All admitted that there are, as taxes are now collected, great inequalities, the small taxpayer paying more than his proportion, the large property owners and incorporations paying less than their just proportion. It was reasoned that Governments are instituted for the protection of the lives, liberty and property of the individual, and that all should contribute to the governmental support in proportion to the protection to their lives and property rights; that large incorporations and large property holders shirk and evade their duty and obligations in the payment of taxes; that untruthful statements of property, for

taxation purposes, are made, throwing the greater burden of taxation on the taxpayer who gives a truthful statement of his property. Outside of giving to the assessor a truthful statement of property, the Grange can suggest no remedy for the evil; but it recommends that the State conventions of assessors and supervisors should study this defect and injustice and recommend to the law-making bodies remedial measures.

"What is Woman's Work in the Grange?" was drawn from the question box and referred to the Committee on Woman's Work in the Grange.

The subject for next meeting is: "State Colleges and Universities Should be Preferred to Those Under the Control of Religious Denominations."

At 3:30 o'clock the Grange adjourned to see an exhibition of a disk plow at work, manufactured by the Fresno Agricultural Works. J. T.

### New Granges Formed in Placer County.

C. D. Harvey, Deputy State Organizer for the Patrons of Husbandry, tells the Auburn Republican that he has recently organized Granges in Gold Hill and Bowman. The Gold Hill Grange has thirty-eight charter members and the following officers elected: Master, J. A. Delameter; Overseer, S. Williford; Lecturer, L. C. Gage; Secretary, Joseph Gibson; Treasurer, C. P. Chirstiansen; Steward, John Peterson; Assistant Steward, D. Wilson; Door Keeper, John Hall; Chaplain, Mrs. Lafayette.

At Bowman about fifty persons attended the meeting and thirty-eight signed the charter roll. Following is the list of officers; Master, G. W. Haines; Overseer, H. H. Bowman; Lecturer, F. Bertscher; Steward, J. Jeffries; Chaplain, Mrs. Potevin; Assistant Steward, S. Rees; Treasurer, F. Folsom; Secretary, Mrs. H. H. Bowman; Door Keeper, Elmer Rees; Assistant Door Keeper, James Reed; Goddesses—Flora, Miss B. Bertscher; Ceres, Miss Rose Musso; Pomona, Miss Hilga Petersen; Lady Assistant Steward, Miss Blanche Rees.

Mr. Harvey stated much enthusiasm pervaded the above-named meetings and the newly formed Granges will augment their membership rolls during the next week or two. The leading Grange in Placer county is Loomis, which has eighty-four members.

**A Treacherous Wind** hits you in the back and the next morning you have lumbago. Ruh well and often with Perry Davis' Painkiller. and you will be astonished to find out how quickly all soreness is banished.

### A NEW FACTORY.

The Stover Manufacturing Company, Freeport, Illinois, have completed a modern factory, the result of legitimate and healthy growth. The Stover people had repeatedly enlarged their old factory and increased their facilities from time to time. When they introduced their Samson wind mill several years ago, and took such a long step forward in wind mill construction, the popularity and enormous demand taxed the old factory beyond its limit to supply and they were forced to build their new factory. Taking a measure of their trade, they have made this factory to cover six acres of ground. It consists of a group of buildings each specially adapted to the making of a particular part, all of which eventually come together in the great assembly room. The annual capacity of this new factory is 75,000 wind mills. The equipment is such as long experience, abundant capital and inventive genius can bring together. The result should be a superior product. Write them for their latest catalogue on the Samson and other products. Address The Stover Mfg. Co., Freeport, Illinois.

### GOOD BYE! SMOKE HOUSE.

The smoke house always was a source of worry, vexation and expense. anyhow. When it catches fire let it go up in smoke. There's a better way to smoke meats. That is by using Krauser's



Liquid Extract of Smoke. It is made from selected hickory wood. It is applied to meat with a brush or sponge. It contains the same ingredients that preserve meat that is smoked in the old way. It gives meat a sweet flavor and protection against insects and mould. It is cheaper and cleaner than the old way. Information concerning its use, cost, etc., can be had by writing to the makers, E. Krauser & Bro., Milton, Pa.

### NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION, a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 309 California Street, San Francisco, at 10 o'clock A. M., Wednesday, the 9th day of April, 1902. I. C. STEELE, President.

CHARLES WOOD, Secretary.

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Imperial ranches are being developed more rapidly now than ever before. A prominent citizen of Riverside, who took a half-section of the Imperial lands, and who now has 250 acres of barley and wheat, says that he can raise barley hay for \$3 a ton, using but 50 cents worth of water to the acre. He gives it as his opinion that nowhere else in Southern California can barley be raised so cheaply, with or without irrigation. After he takes off his barley crop, he will raise a crop of sorghum and millet, two crops in one year. Water stock only from \$13.50 to \$15.00 per acre on easy terms.

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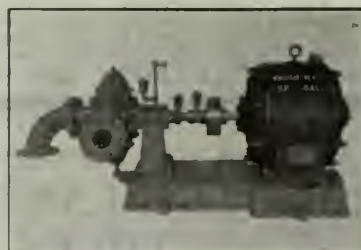
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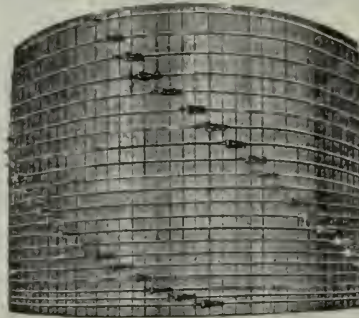
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## ALL THAT IS RECOMMENDED.

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Contractor and Builder, Hardwood Finish a Specialty. Office and Mill, 915 Genesee Street.  
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Yours respectfully, W. JACOB JAECKLE.

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**A. J. C. C. JERSEYS.** Service bulls of noted strains Joseph Mailliard, San Geronimo, Marin Co., Cal.

**28 SHORT-HORNED DURHAM BULLS FOR SALE.** Also 25 grade Durham cows. Also imported French draft stallion: color black, weight 1650 lbs. Address E. S. Driver, Antelope, Cal.

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**BULLS**—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

**PETER SAGE & SON,** Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

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**JERSEYS**—The best A. J. C. C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

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**WELLINGTON'S IMPROVED EGG FOOD** for poultry. Every grocer and merchant keeps it.

**TRACY POULTRY YARDS,** Tracy, Cal. P. O. Box 53. S. C. White Leghorns and B. P. Rocks. Eggs \$1.50 per 15; \$5.00 per 100. Plymouth Rock stock for sale, also a few incubators. Write for wants and secure prices.

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Offers For Sale the following Well-bred Stallions:

**ON STANLEY 2:17** <sup>1</sup>/<sub>2</sub> Register No. 31051. <sup>2</sup>/<sub>2</sub> By Direct 2:05 <sup>1</sup>/<sub>4</sub>, sire of Directly 2:03 <sup>1</sup>/<sub>4</sub> and 35 more in 2:39. Dam Lilly Stanley 2:17 <sup>1</sup>/<sub>4</sub> (dam of Rokeby 2:13 <sup>1</sup>/<sub>4</sub> and Rect 2:16 <sup>1</sup>/<sub>4</sub>) by Whippleton 1883.

**FRAM 2:17** <sup>1</sup>/<sub>2</sub> Register No. 0479. By Direct <sup>1</sup>/<sub>4</sub> 2:05 <sup>1</sup>/<sub>4</sub>, sire of Directly 2:03 <sup>1</sup>/<sub>4</sub> and 35 more in 2:30. Dam Silver Eye (dam of Raymon 2:17 <sup>1</sup>/<sub>4</sub>) by Abbottsford 2:19 <sup>1</sup>/<sub>4</sub>.

**INFERRA 2:24** <sup>1</sup>/<sub>2</sub> Register No. 30838. By <sup>1</sup>/<sub>4</sub> Diablo 2:09 <sup>1</sup>/<sub>4</sub>, sire of Clipper 2:06, Sir Albert S. 2:08 <sup>1</sup>/<sub>4</sub>, Diadine 2:10 <sup>1</sup>/<sub>4</sub> and 15 more in 2:30. Dam Biscari by Director 2:17, second dam Bicar (dam of 6 in 2:30 and 4 producing sons) by Harold.

**BEAU B. 2:16** <sup>1</sup>/<sub>2</sub> Register No. 32606. By <sup>1</sup>/<sub>4</sub> Wildnut, sire of Wild Nutting 2:11 <sup>1</sup>/<sub>4</sub>, El Rami 2:14 and others. Dam Nettie Benton (dam of 4 in the list) by Gen. Benton.

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## French Draught Stallions FOR SALE.

**HUGO.** REGISTERED NO. 9438. Weight 1800; bred by J. D. Patterson, Oxnard, Cal.; foaled April 18, 1898. Sire, Leopold 4250 by imp. Louis 3299; dam, Henrietta II 5779 by imp. Montebelle 3398; second dam, imp. Lady Henrietta I 2419.

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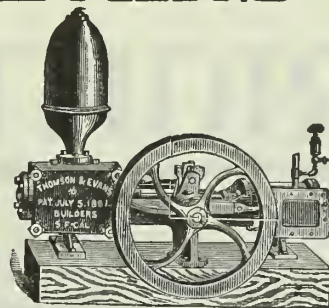
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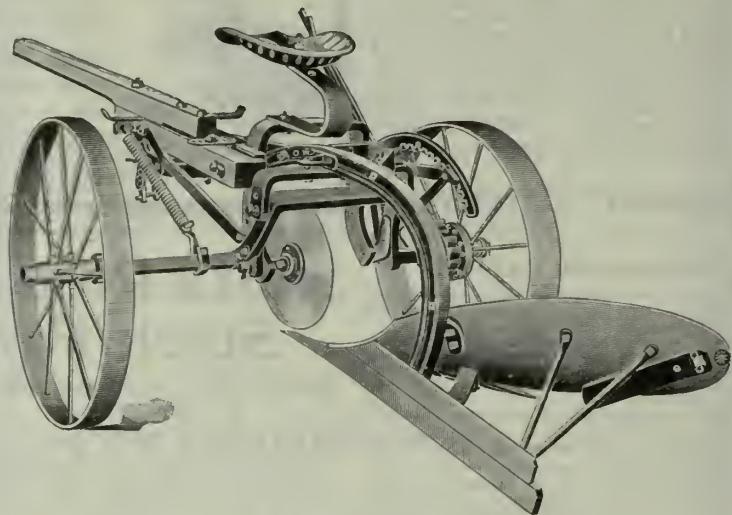
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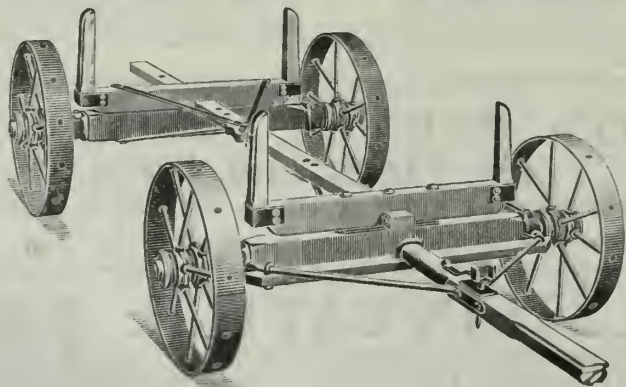
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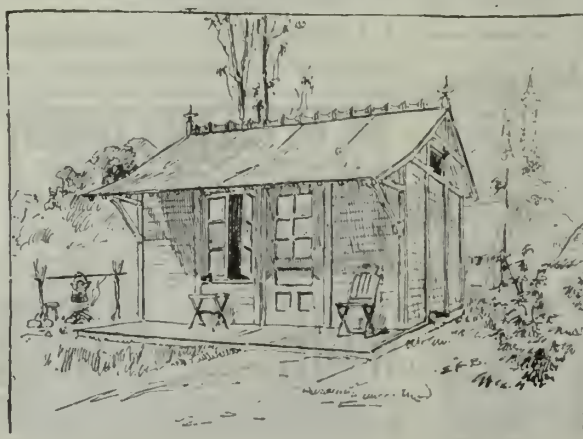
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# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 12.

SAN FRANCISCO, SATURDAY, MARCH 22, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

### Transplanting Orange Trees.

It is timely to talk of transplanting orange trees, for, though they may be successfully moved at other times of the year, if water is at hand, the trees which are taken into permanent places just after the ground has been thoroughly warmed by the spring sunshine seem to find conditions best suited to establishment and growth. There are old ways of transplanting orange trees and there are new ways. Naturally the latter should receive attention from Mr. J. W. Mills of the University Experiment Station near Pomona in his bulletin on "Citrus Fruit Culture," to which we referred in last week's issue. Mr. Mills has been impressed with the careful and successful horticultural work of Mr. J. H. Reed of Riverside, and shows his results by photographing the trees, which bear their own testimony to liberal treatment, and we reproduce both his words and pictures.

According to Mr. Reed's method, vigorous trees are selected in the nursery and are well watered before removal. The longer branches are but slightly cut back, leaving most of the foliage on. The trees are then lifted with large balls of earth and are taken directly to the plantation, where holes 2 feet deep and 2½ feet wide have been prepared, into which they are placed, and the earth is well filled in around each ball, not firmed, but settled with water, so that the trees will stand at the same height as they did at the nursery. No planting should be done unless there is irrigation water available at the time. After the ground has been soaked for several feet on all sides of the newly set trees, thorough cultivation should follow as soon as the land is in a proper condition. Under any system of transplanting this is good practice.

A small amount of fertilizer is applied soon after planting, for the young roots to use when they first start out from the balls. A pure bat guano with a high percentage of nitrogen—about three-fourths of a pound to the tree—has been found to give the best results; but any commercial fertilizer rich in nitrogen, or animal fertilizer, if placed properly and kept moist, answers well. It is applied in trenches each side of the ball, at right angles with the irrigation furrows, and reaching to them. They may be made by plowing a deep furrow and deepening with a shovel to 10 or 12 inches. The material is carefully distributed and slightly mixed with the earth at the

bottom of the furrows; the water from the irrigating furrows keeping them always moist, it is available as soon as reached by the rootlets. This also tends to deep rooting. Thorough irrigation should follow planting every twelve or fifteen days during the first summer. The whole space between the rows should be thoroughly and deeply wet—not merely a narrow strip on each side of the rows. Mr. Reed has traced roots that have grown during the first summer over 6 feet from the tree, and these should be supplied with moisture at all times.

The advantage claimed for the Reed method is that it retains the top of the tree, and makes use of it immediately. The retention of nearly all the leaves and branches enables trees under proper conditions to produce a much more vigorous growth than under the ordinary system of severe pruning, when moved from the nurs-

A Citrus Fruit Region in Southern California.



after being transplanted, watered and fertilized.

The good start given to trees by the Reed method is shown in their size, vigor and productiveness, and it is also claimed that a crop of oranges is obtained, without injury to the trees, one year earlier than if



Ordinary Method: Trees Six Months After Planting.

The Reed Method: Trees Forty Days After Planting; Less Than One Per Cent Required Cutting Back.

### Comparative Growths After the Ordinary and Reed Methods of Planting.

ery. The best of care is essential to success in this method. If trees are to receive poor or only ordinary treatment after being set in the orchard, the common method of severe pruning is best. Mr. Reed himself prunes back any trees that show lack of vigor

they were planted by the usual method. Trees planted by the Reed system produced over 100 boxes of oranges on ten acres, the second year from planting, and one box per tree three years from the time of planting.

The trees are shown in the accompanying engraving. Ten acres of trees five years old produced 2500 boxes. There was no appreciable injury done the young trees on account of the early bearing, for they continued to make a sturdy growth while maturing the crop of fruit. Trees planted in the usual way one year before, on adjoining land that is similar in character, although receiving good care from the start, are not now as large as those of Mr. Reed, though apparently thrifty.

This method of transferring trees to the orchard and securing their rapid establishment there is based upon intelligent selection in the nursery and very careful attention to details after transplanting. Mr. Reed does not claim that he originated the method, but Mr. Mills has not observed it except in his orchard, which furnishes an excellent illustration of its value under proper conditions. Other pictures show the contrasts between an orchard planted by ordinary cutting-back methods and one planted on the Reed system.



Twenty-Seven Months: Ten Boxes of Oranges per Acre in the Second Year.

Thirty-Eight Months: One Hundred Boxes of Oranges per Acre in the Third Year.

Washington Navel on Sweet Stock, According to the Reed Method.



# PACIFIC RURAL PRESS

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E. J. WICKSON. Horticultural Editor

San Francisco, March 22, 1902.

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## The Week.

Showers have been quite widely distributed over the entire State and have done much to compensate for a few days of drying wind preceding. Conditions have been very favorable for growth and for bringing fruit lands into proper tilth; in short the spring is advancing very beautifully as a rule, and a good spring has much to do with all the rest of the year in California.

Travel is just now very active and full trains are the rule on the railways. The movement to promote settlement in the central and northern districts of the State and to facilitate location of home seekers on arrival, is progressing very satisfactorily. The assembly of delegates from various interior points in this city, in the interest of this movement, was quite emphatic and satisfactory in its work. The State Board of Trade was given leadership, and in view of the very rich experience of those who have successfully conducted the organization during the last few years, this seems a very wise and promising proceeding. Now there should be general effort and enthusiasm all through the districts which need population, to furnish the Board abundant means for the work which it knows well how to do. It will be impossible to accomplish much unless there is general co-operation in this direction.

The spot wheat market is firm at unchanged prices, but options have ranged somewhat, closing about the same as a week ago, though they went higher in the interval. Ocean freights have dropped again, as one charter is reported at 22s 6d for a mixed cargo of wheat and barley, which would be equivalent to a still lower figure for straight wheat, because barley is the more bulky and should charter higher than wheat. Three straight cargoes of wheat, one of wheat and rye to Europe, and another of barley straight for Australia, taken with 18,000 barrels of flour, 2500 sacks of beans and 200 cases of honey aggregate over half a million dollars worth of produce gone to sea, which is very good for this point of the season. Barley and the minor cereals are all steady and unchanged. White and Lima beans are weaker, but colored beans are holding their own. Bran is lower, as receipts are large and other mill by-products are steady at last week's rates. Hay is weak and lower for stable while cow hay is unchanged. All meats are firm and unchanged. Butter is lower and cheese is weak, though not materially lower. Eggs are firm and in sharp demand for storage purposes. Poultry has been rather weak and dragging owing to free Eastern arrivals, but it is doing better at the close,

especially for large fowls, while small stock is lower than for several weeks. Potatoes are firm for choice to fancy, with some fine selections going above quotations. Onions are firm for fine stock. Asparagus and rhubarb are declining and being handled in larger quantities. Cold storage apples are unchanged. Oranges are weaker for larger sizes, which are now in too large supply, though recently their absence was complained of. The best lemons are doing better and others are as weak and cheap as before. Limes are still easier. Jobbing nuts and dried fruits is going on at good prices for everything but old prunes. Honey is easier. But little is doing in a wholesale way with hops, though prices are said to reach 15 cents for the best lots. Nine tons have gone to New York by steamer. There are a few lots of new wool in, but no business reported and no prices fixed yet.

We hope all beekeeping and fruit growing members of the RURAL household will read the article on another page concerning the relation of the bees to pear blight. It is especially timely because of the experiments now in progress in Kings county. As already described in our columns, a certain considerable area will be emptied of domesticated bees and the behavior of the blight will be closely observed. This will show how many wild bees there are domiciled in the district for one thing. Another experiment has just been provided for by the Kings County Supervisors, so that a certain number of trees may be kept free from all kinds of bees. It is proposed to cover with mosquito netting and thus keep away the bees during the months when the pear trees are blossoming, about twenty healthy trees from which all pear blight has been cut out. The trees are in the large pear orchard of Charles Downing, near Armona, and they will be closely watched by many witnesses. We hope the bearing of the trees, as compared with others adjacent of the same kind, will also be noted.

The State Board of Agriculture has decided to sell its park property at Sacramento, which is within the city limits and too valuable for fair purposes. Communications have been received offering the board free of cost suitable sites for exhibition and fair grounds outside of Sacramento, with all necessary buildings. Oakland and San Jose are the towns most desirous of securing the location of the State Fair, and either city is willing to make needful concessions. Sacramento people believe, however, that the fair will be retained in Sacramento, despite the endeavors frequently made to remove it. This year's fair will, we believe, be held at the old stand, and arrangements to that end are going forward diligently on the part of the directors. It has been decided to open the fair a week later than usual, that is, on September 8, and it will close on September 20. We ought to have a magnificent fair this year. It would furnish a splendid rallying point for the development workers, and the fame of the display might be sent throughout the earth.

The wheat growers' delegates assembled in Sacramento on Tuesday of this week and proceeded with the effort toward effective organization, to be known as the "California Grain Growers' Association." Early reports say that sixty-five delegates were present, representing fifteen counties. This is nearly the full number arranged for in the call for the meeting. A due amount of talking was done and all were exhorted not to be discouraged if some wheat growing sections took little interest. President Pierce rightly said that in such undertakings too much must not be expected at first. After preliminaries, the following permanent directors were elected to serve for one year from the districts named: Tehama and Glenn, P. R. Garnett of Willows; Colusa, Jesse Poundstone of Grimes; Butte, V. P. Richards of Gridley; Sutter and Yuba, B. F. Walton of Yuba City; Sacramento, David Reese of Florin; Yolo and Solano, John R. Rice of Dixon; Contra Costa and San Joaquin, H. C. McCabe of Brentwood; Merced, L. H. Applegate of Merced City; Madera, J. F. Daulton of Madera; Stanislaus, J. S. Wootten of Modesto. G. W. Pierce, President of the Association, was unanimously elected director at large. The Association will have a regular place of business in San Francisco. We shall have more details next week about how the organization intends to proceed with its work.

## QUERIES AND REPLIES.

### Prionus Borer and Lilac Moth.

TO THE EDITOR:—Enclosed I send you a borer (about 2 inches long and as thick as one's little finger) found in the roots of prune, plum and apricot trees. The trees commence to die slowly on light hill soils, and are being dug out. These worms are found in the root. Are they the cause of the trees dying? I also send a cocoon found attached to the limb of a tree. Are they of the same insect?—READER, Watsonville.

The large borer which you send is the larva of one of our largest beetles, called *Prionus californicus*. It is a large, reddish-brown beetle with very prominent antennae and is quite abundant in vicinity of forest trees. These borers are certainly able to kill trees and have been often reported for accomplishing that. There is no remedy which can reach them in the roots. Clearing up old logs and stumps and other material of that kind in the neighborhood of the orchard and killing all these beetles as they are found crawling around in the twilight will do something toward reducing the numbers. The cocoon which you found attached to the limb of the tree has no relation whatever to the borer found in the root. It is the cocoon of a large, handsome moth, the larva of which is sometimes called the California silkworm. It is most commonly found feeding on the California lilac or *Ceanothus*, and it takes its name from that plant: *Samia ceanothi*. Both these insects are so conspicuous that they seldom become abundant enough to do very great injury.

### Shothole Fungus on Peach Twigs.

TO THE EDITOR:—I send you sample of peach tree fruit spurs that seem to be diseased. We pruned the trees in December, when the trees and fruit spurs seemed to be all right. Will you kindly let me know what is the matter? I had some of the same disease last year. The trees are five years old and have made a good, vigorous growth.—J. S. BROWN, Suisun.

This is a gumming of the shoots of the peach which appears either as little globules of irregular shape here and there along the twig, either near the buds or away from them, or as a glassy covering over the general surface of the twig. It is accompanied by many roundish dead spots on the bark, which are the injuries of the "shothole fungus." Wherever these occur the bark seems to be so thinned that the sap bursts out through slits apparently made by the sap pressure. The inroads of the fungus upon the bark of the twigs seem to be the cause of the gumming in this instance. Though there is no help for these injuries, a spraying with lime, salt and sulphur, if the buds are still closed, or with the Bordeaux mixture, if it is too late for the former, would kill the spores which are now appearing on the diseased spots ready to attack the new growth later.

Similar gumming sometimes results from frost after the sap flow has commenced, but in this case it seems to be the result of the fungus attack.

### Abnormal Bud Growth.

TO THE EDITOR:—By this mail I send you a piece of an abnormal growth found on a Bailey sweet apple. There are a number of such growths of various sizes in the axils where secondary limbs start out from the main ones. The growth appears to be simply a mass of warty excrescences on the bark. I should be glad to learn if it is any more, also to what it is due and if it is injurious to the tree, which seems in good health.—J. H. BARBER, Jackson.

The abnormal growth which you found upon the apple tree consists simply in the multiplication of buds. Why this tissue, which should have been normal, should have been excited into a production of such a mass of buds is not easy to explain. Similar effect is produced on the willow by bruising the bark, which is followed by development of the buds in some cases. This abnormal growth is analogous to what is called fasciation, as when branches show a disposition to grow in bundles and where buds enough for a number of branches are developed on one, causing a flattening in many cases. We have seen cherry branches, which should have been three-fourths of an inch in diameter, flattened out so that they were three inches in breadth and one-half inch in thickness and the surface quite thickly studded with buds, although not nearly so many as in this instance. What causes these abnormal growths has not yet been demonstrated. They are not injurious, unless they should start to grow into a mass of suck-



ers, and then the whole mass should be removed and the wound painted. It will soon grow over with healthy bark from the sides of the wound.

#### Summer Crops or Summer Fallow.

TO THE EDITOR:—Would the raising of a cultivated crop injure the raising of a crop of wheat on the same ground next winter? I have a piece of sandy loam in good order but inclined to bake after rains. As it is pretty late to sow small grain even for hay, I thought it might pay to raise a summer crop, as we have had good rains. As you know, the drawback in this country is the one-crop system.—READER, San Miguel.

The raising of the cultivated summer crop would in some cases benefit a subsequent crop of wheat, because of the better cultivation given, but double cropping is very largely conditioned upon the available moisture supply and wheat following a summer crop would be shorter of moisture than one which followed a cultivated bare summer fallow. Most of the summer fallowing done in California is for the purpose of retaining moisture, so that a good part of two years' rainfall is used for one crop. We should think that a crop of sorghum or corn or squash, if the frost-free season is long enough in your locality to grow these plants, could be made profitable in connection with stock feeding. Otherwise it is doubtful whether you could get enough out of the effort to make it worth while. If you can grow something for stock and sell the stock it is usually the best way to get the money out of the summer crop. Of course, if you had a supply of irrigation water the matter would be very different.

#### Old Scars of Woolly Aphis.

TO THE EDITOR:—The enclosed cutting is from a Duchess of Oldenburge. What is the matter, the cause and the remedy?—ROBT. McCLELLAND, Pepperwood, Cal.

The peculiar swellings on the apple twigs are caused by the woolly aphis—the insect which makes patches of cottony whiteness under which it conceals itself. This injury was done long ago and the irritation caused by the insect has been grown over. To free the trees from similar injury to the newer twigs the insects must be killed. They are now on the roots just below the surface of the ground and if you have plenty of wood ashes, put several shovels full around the base of each tree. The lye leached by the rain will soak down and kill the insects. Those which appear later on the tree can be killed by spraying with kerosene emulsion.

#### Roots for Prune Trees.

TO THE EDITOR:—I wish to plant prune trees to fill out an orchard about 7 miles from Tulare, on road to Lindsey. The land is rather light—considerable sand. In many places there is a hardpan about 2 or 3 feet from the surface. What would be the best root for the prune under these circumstances—one that would do well in rather light soil for prune land and yet have the best chance to pierce this hardpan?—ORCHARDIST, Tulare.

It is difficult to advise you on this proposition. If we knew from what cause the trees died in the places which you speak of it would be easier to make suggestion. If you think the injury came from standing water on the hardpan, the Myrobolan root will be the only one worth trying. If the trees died because the soil was shallow and dried out too much at those places, then the almond root would be most likely to survive. It would be desirable in those places to dig through the hardpan or blast it in such a way as to assist the roots to deeper penetration. If the hardpan is a thin layer and there is free soil below it, the almond root will penetrate deeply and will succeed in maintaining itself. If, however, it is not a thin layer of hardpan, but a heavy bottom clay of indefinite depth, then the Myrobolan would be the most promising.

#### Egyptian Corn.

TO THE EDITOR:—Will you kindly inform me how to plant Egyptian corn, also where one can procure seed?—RANCHER, Rocklin.

Egyptian corn is best planted in rows about 3 feet apart and the seed dropped thinly so that the plants will stand from 6 to 12 inches apart in the row, if you wish to grow it for the grain; if for forage purposes it may be sown more thickly than that. Cultivate well as you would for corn, so as to keep moisture in the soil, and if irrigation is desirable, as it is likely to be in your district, irrigate by means of furrows between the rows. Do not plant until danger

of frosts is over, for the plant is very tender, but plow the land now and harrow to retain moisture and drop the seed in a shallow furrow when the frost-free time arrives. On a large scale a seeder is desirable.

#### Growing Tree Seedlings; Borers.

TO THE EDITOR:—Should not linden and mulberry seeds be frozen or scalded prior to planting? Would two or three weeks' freezing in spring in moist sand be sufficient for the locust and other hard-shell seeds prior to planting? How deep should elm, larch, European ash and that class of seeds be covered—also, mulberry? I experimented some with above and other seeds last year and only had partial success; hence desire to know wherein I failed in culture. What is the best method of protecting young apple trees from borers? Last year I covered with pieces of muslin. Is not paper better? What is the most approved treatment where the borer has found lodgment?—SUBSCRIBER, Yerington, Nevada.

Freezing is believed to be efficacious in helping hard shell seeds to germination, and such freezing as you mention ought to do it; but we are poor authority on such an agency in California. We find heat and moisture ample effective helps. Locust and acacia seeds should be scalded—not merely put into tepid water, but immersed in boiling water, and allowed to stand until cool. The covering of all the seeds you mention should be shallow—only about enough to conceal the seeds—and then a light litter of chaff used as a mulch to hold moisture in the surface soil. Deep covering or shallow covering which is allowed to dry out are both likely to fail of results. White-wash is the best protection against borers. There is now satisfactory treatment for the small borer (which is the most common one) after it has entered the tree. It does not multiply in the tree, and about all that can be done for the tree is to prevent others from going in. Some large borers can be killed in their burrows by pushing in a wire after them. You have some of that kind in Nevada. To advise you intelligently we should have specimens or fuller description of the borer.

#### Fertilizer for Worn Grain Land.

TO THE EDITOR:—Could you tell me if potash would pay to put on worn-out grain land of the yellow adobe kind? If so, how much would it take to the acre, and what would be the price per acre?—GEO. W. REISTER, Williams, Cal.

Potash is desirable on some of the light-colored soils of the Sacramento valley, but you need a fertilizer containing phosphoric acid and nitrogen, as well as potash; in fact, the first two are usually first needed. It is pretty late to apply fertilizer now for wheat, except where good spring rains are pretty sure to come. You could use on an acre, as an experiment, 100 pounds nitrate of soda, 200 pounds acid phosphate and 40 pounds muriate or sulphate of potash. Mark the acre well and note the results. Dealers in fertilizers advertising in our columns will inform you about prices.

#### Kerosene Emulsion for Chicken Lice.

TO THE EDITOR:—I see in your last issue you advise the use of kerosene emulsion for scale on berries. Why wouldn't it be good for chicken lice? How is it made?—SUBSCRIBER, Milpitas.

We have heard of dipping hens in kerosene emulsion to kill lice, but it makes a sorry looking hen, and we imagine she feels as mean as she looks. Such treatment is not necessary if you give the hen plenty of dry dust for her dust bath and use plenty of kerosene oil on the roosts and nest boxes and fill all the cracks of the house with good sharp whitewash put on hot with a brush or spray pump. If you take care of her surroundings the hen will take care of herself.

The kerosene emulsion formula has been given several times recently in these columns, for instance, in the issue of January 25.

#### Whitewash for Fruit Trees.

TO THE EDITOR:—Will you please state the recipe for whitewash used for fruit trees?—READER, Amador county.

Any of the durable whitewashes of which we have printed recipes from time to time will adhere well and protect trees from sunburn. A tree whitewash made on this formula has given very good results: Lime, 30 lbs.; tallow, 4 lbs.; salt, 5 lbs. Dissolve the salt in the water used in slaking the lime, stir in the tallow while the heat remains from slaking and add enough more water to make the whitewash flow well.

## WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending March 17, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director

#### SACRAMENTO VALLEY.

The weather during the week has been generally favorable for growing crops and all kinds of farm work. Heavy frosts occurred in some places on the morning of the 14th, possibly causing slight injury to apricots and almonds. Pear and prune trees are reported backward in blooming, but all other varieties of deciduous fruits are in full bloom and give indications of an unusually heavy yield. Grain has made rapid growth and is in excellent condition; present prospects are good for the heaviest crop ever raised in the valley. Green feed is abundant and of good quality. Stock are in good condition. Reservoirs are well filled and the mountains are covered with snow.

#### COAST AND BAY SECTIONS.

Nearly normal temperatures have prevailed during the week and conditions have been favorable for crops and farm work. Light showers have fallen in some sections. Heavy frosts caused no damage in Sonoma county. In portions of the northern district the soil is yet too wet for cultivation. Clear Lake is reported higher than it has been for several years. High winds caused some damage to grain near Sonoma. At Willits there was a light snowstorm and 0.17 inch rainfall on the 13th. The acreage in grapevine is being largely increased in the vicinity of Peachland. Fruit trees in San Benito county are coming into bloom slowly. Deciduous fruit prospects are excellent in all sections. Grain and feed are in good condition and growing rapidly.

#### SAN JOAQUIN VALLEY.

Cool weather has continued during the week with occasional frosts and high winds in some sections. The frosts were generally too light to injure early fruits, but in portions of Tulare county the temperature fell to 28° Saturday morning, and reports of damage may be expected later. Many orchardists are using crude oil in small iron pots for smudging, with excellent results. Work is progressing in orchards and vineyards, and trees and vines are in good condition, with prospects of heavy crops. Grain has made fair growth, but would be benefited by warmer weather. Plowing and seeding are progressing and the grain acreage is being largely increased. Pasturage is good and plentiful.

#### SOUTHERN CALIFORNIA.

Generally clear, cool weather has prevailed during the week, becoming warmer toward the close. No injurious frosts have occurred. The following seasonal rainfalls are reported: Anaheim 9.20 inches, Azusa 9.54, Los Angeles 9.37, North Ontario 11.23, Poway 7.49, San Diego 4.64. The snow on Mount San Antonio ("Baldy") is reported heavier than for several years. Deciduous fruit trees are in good condition, but are late in blooming in many places, owing to cool weather. Orange trees are budding slowly. Grain is in excellent condition, and in some places will make an average crop. Grass is making good growth and pasturage is plentiful.

EUREKA SUMMARY.—Plowing again resumed; seeding later than usual. Grain is doing better and pasturage is excellent. Some peach and plum trees are in bloom. Sunny weather is much needed.

#### Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, March 19, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	.88	42.54	40.17	33.98	54	38
Red Bluff.....	.20	27.13	22.17	20.06	70	32
Sacramento.....	.04	15.29	17.18	19.22	68	40
San Francisco.....	.15	16.77	18.79	20.96	66	44
Fresno.....	.02	5.86	10.35	10.33	70	38
Independence.....	.00	4.05	5.81	5.13	66	28
San Luis Obispo.....	.38	13.78	27.62	14.70	78	42
Los Angeles.....	.46	9.89	14.10	14.51	70	40
San Diego.....	.18	5.17	8.66	7.06	76	42
Yuma.....	.00	.48	3.60	2.79	84	40

#### The Tilton Apricot.

TO THE EDITOR:—As the introducer of the Tilton apricot still continues to refer to me as "the late Luther Burbank," I at last arise to inform him that I am not yet dead, and also that I have never given the Tilton apricot a thorough test as stated, having never seen a tree of it, though I have asked him for this very privilege; and, further, never having seen a dried sample of the fruit, of course do not vouch for its drying qualities. All I have ever seen of it was a few samples of the fresh fruit, which seemed to me to have good qualities. LUTHER BURBANK.

Santa Rosa, Cal., March 15.

As Mr. Burbank explains that he is not dead yet, and as we never have known him to be "late" about anything, we can follow old-fashioned newspaper styles and say that we are "heartily glad to make the correction."



## HORTICULTURE.

### The Relation of Bees to the Orchard.

By MR. M. B. WAITE of the United States Department of Agriculture at the National Bee Keepers' Convention during the Pan-American Exposition.

I will discuss the subject under three heads: First, bees and the monilia fungus; second, bees and pear blight; third, bees as pollinizers.

**THE BROWN ROT.**—Bees are certainly intimately connected with the orchard, both in health and disease. Taking up the first subject, I think I can give you something new. It is probably the least important of the three matters which I shall take up, but it is the newest. I am quite well satisfied from observations made during the early part of the present summer that bees are largely responsible for the rapid distribution of the peach and plum rot fungus. They are not the only culprits connected with that distribution. Wasps and soldier bugs and several other puncturing insects are also concerned in the matter, and the wasps and the puncturing insects the ones which usually make the openings, especially in perfectly sound fruit. However, bees rapidly follow in the punctures by other insects. In June and July hundreds and thousands of bees may be seen swarming over the early ripening peaches and Japanese plums, and in going over rotten fruit they carry the spores into the wounds made by the wasps and soldier bugs and into weather cracks. The peaches cracked open badly by the wet weather this year. Odmixon was the worst in Maryland, but even varieties like Elberta make a great many weather cracks. Into these cracks the bees penetrated. They even ate large holes in the fruit. I have seen a hole large enough to hold three bees inside of it, and even on gathering the fruit they were so busily engaged that they were still at work inside the hole.

I have endeavored to follow up this subject a little more closely, and tried to find out how much the monilia fungus could spread without the aid of bees, and investigation showed that it was able to spread without the aid of insects—in other words, it does blow by the wind, and gets about in that way. I covered trees with mosquito netting, and also branches, and thought perhaps I might be able to prevent the spread of monilia with mosquito net protection, but was not able to do so entirely. I somewhat reduced it, however, showing that the bees are active agents in the distribution of monilia.

**PEAR BLIGHT.**—Taking up the second subject of bees and pear blight, we may say that bees are very active agents in the distribution of pear blight. In order to understand fully, however, the exact part that bees do play in the distribution of pear blight, it will be necessary to go very briefly over some other points concerning this disease, and to give, in fact, the life history of the pear blight bacillus through the year.

In the first place, we have three methods by which the pear blight germ enters the tree: First, through the blossoms, resulting in what is commonly called blossom blight, to distinguish it from the other methods of communication of the disease; second, through the tender tips of growing twigs—but either blossom blight or twig blight may run down on the limbs and trunks; and, third, blight may enter directly into the fleshy bark of young trees.

The latter is comparatively a rare method—in fact, by far the greater number of infections are directly through the blossom.

**BLIGHT AND BLOSSOMS.**—Now, of course, it is only in blossom blight that the honey bee is concerned, and, furthermore, all insects which visit the pear and apple and quince blossoms are more or less concerned in the matter of distribution on the blossoms. I may say also that other insects than the honey bee are largely instrumental in the distribution of pear blight on the twigs, and we have scarcely been able to find a direct, normal method of introduction of the disease in the twigs without the introduction of some mechanical or insect puncture. Beginning with the spring of the year, the disease breaks out on the blossoms. Ordinarily, trees do not have the blight very badly until they come into bloom, and this, as I said before, is mostly due to its distribution by bees and other insects which visit the flowers and are the main factors. The pear blossom is a very open one and is extensively visited by a whole list of insects. I started out to get a list of insects which visit pear blossoms, but when I reached the number of forty I gave it up. Nearly all the flying insects—the bee being most active of all, but even beetles and wasps, and occasionally a humming bird, the latter, of course, not being an insect—visited the pear blossoms and carried the disease along.

The blight begins on the blossoms in early spring; then during the summer we may have twig blight clear into September. The disease runs down on the twigs, and in the great majority of cases dies out. The disease works in the bark and as a rule finds the tree, at some time during the late spring and summer, a little too dry and tough for it to take hold of, and it dies out. Occasionally infections, however,

keep running down on the twigs, get into the fleshy bark, and keep on working slowly till fall. After this season of year the trees are so moist that those germs will not dry out, but will live over winter, resulting in what I call "holdover blight." It stands zero weather perfectly. In the spring the holdover cases start off when root pressure begins and when the tree is forced full of sap. In some instances in the South very active changes go on in these holdover cases during mild winter weather, but in the Northern States they don't have time to do much damage. The virus runs out on the sides of the tree and drops down. I saw some very fine cases in the mountains of Virginia last spring. The flies and wasps and other insects swarm on the exuding sap, and as the blossoms open they fly from that to the opening blossoms and start the infection for the next year.

**BEES AND BLIGHT.**—Bloom blight, then blight running on the branches, then holdover blight, then re-infection next spring on the blossoms. When it is started on the blossoms it is carried like fire. Now, as I started to say a moment ago, you would like to have the authentic proof that the bees carry pear blight. I worked long and patiently on this problem for three or four years. In the first place, the great abundance of blossom blight leads to a suspicion, at least, that we have here some normal, effective method of distribution. There is some regular way about it, and we shall see what that method is. In the second place, the disease begins in the nectaries. The germs of the pear blight are found growing and multiplying in this nectar. I determined this mostly by artificial infection. By taking pure cultures of the pear blight germ and touching the nectary with a camel's hair brush I started the pear blight off. It requires no puncture. It is the only point on the tree where the germs enter normally without a puncture. The nectar has no shield or cuticle over it to keep out the germs.

**HOW THE BEES WERE CAUGHT.**—Now, my first acquaintance with this relationship of bees to pear blight came about something like this: When I had succeeded in isolating the pear blight germ I immediately tested the validity of my cultures by a series of experiments with a camel's hair brush on some blossoms, and I inoculated and labeled a number of blossoms around the lower part of a pear tree on the Agricultural Department grounds at Washington. I spent a good deal of time actually watching those blossoms growing, and, of course, here came the bees right in front of me, and as the germs began to grow in the nectaries they began to visit my infected blossoms, and I saw them fly from these over the trees to the other blossoms. I captured two bees, caught them in the act of visiting the infected blossoms, and taking them into the laboratory made plate cultures by the method in which we ordinarily isolate bacteria, and succeeded beautifully in isolating pear blight germs from the mouth parts of the bees.

In other words, we actually caught the bees in the act, and this was repeated a number of times and in different parts of the country. Now, it seems as though we had matters pretty well proven. My trees that I had infected came down beautifully with pear blight. The clusters all came down which I had infected and labeled, and a large number of others all around the tree.

The question, then, was as to what other methods of distribution the pear blight germ might have, and I set about with quite an elaborate series of experiments to find out the truth of the matter. The main question was whether the pear blight germ was carried by wind. If it could be blown by the wind, it would not make any difference whether the bees carried it or not; but it was not blown by the wind, and became a matter of considerable importance. So, having gone through one spring in Washington, I moved up to western New York and passed through another spring.

**ANOTHER YEAR'S EXPERIMENTS.**—A gentleman near Brockport, N. Y., very kindly turned over a small orchard to me, in which I could start a small, artificial epidemic of pear blight. We inoculated about six or eight trees and about eight or ten small branches on each tree. Before inoculating them I covered a large portion of the tree with bags of various density—mosquito netting, cheese cloth and paper—reasoning that by covering the trees with mosquito netting if the disease is blown by the wind it would certainly blow through the mosquito netting and appear under the bags.

The disease gradually spread from my centers of infection, but in no case did the disease get through the mosquito netting, although a large percentage of the clusters broke down on the trees that were infected outside of the mosquito netting. We inoculated blight in the bags and kept it in; we inoculated it outside and kept it out.

Now, in further support of the view that I have taken that pear blight is not borne by the wind, we have two important facts. The first is that pear blight virus is always a sticky mass, which cannot be blown by the wind. It is a gummy material that can readily be carried by anything that touches it, but not by the wind. The second fact is that the pear blight germs on drying rapidly die. In ordinary orchard conditions a few days after the twig dries out the germs die, so that pear blight germs are not

lying around promiscuously. We have no evidence whatever that we can get infection in any other way. So I think you will be willing to accept my proposition that bees are active agents in carrying pear blight on blossoms, and that the blight is not carried by the wind.

**POLLINATION.**—Now, we have been giving the honey bee such a bad record that it is with great pleasure that I turn to another phase of this subject. Very early in this work the question came up in my mind, If the honey bee was doing unfortunate work, what was its function on the blossoms? The question came up, Are our pear blossoms of such a nature that they required this insect fertilization by the bees? So I started out to determine the relationship between the bees and the fertilization of the blossom. The result was a long series of experiments lasting over three years.

On account of the limited time I shall have to state very briefly the results of this pollination work. In the first place it came out that most of our pears, as a result of careful hand pollination on test, are sterile to their own pollen. Cross-pollination is characteristic of our orchard fruits. It is perhaps not true of peaches and quinces, but as far as apples and pears are concerned cross-pollination is a necessity.

By trying a large number of experiments I concluded that insects were the largest agents in cross-pollination. The blossom of the pear is not of the type of wind fertilization blossoms, but is distinctly of the insect fertilized type. Now, this matter is so complicated that it will be impossible, in the short time at my disposal, to go into the details of fertilization. To make the story short, we may say that from the biological standpoint the bees are doing their normal, natural work in visiting the pear and apple blossoms. The blossoms are for the bees to pollinate, are developed by insects, and the insects have been developed in correlation to them. It is a normal, biological process, the visiting of orchard fruit blossoms by bees. The bees are there performing their proper function.

Now, the question is, Is the honey bee to be looked upon as useful or injurious? Do its beneficial effects equal its injurious effects? When there is no pear blight about it is easily decided in favor of the usefulness of the bee, but when there is an outbreak of blight it is a rather hard question to decide.

There are no doubt times when pear blight is rampant in an orchard when it would be better not to have the honey bee or any other insect in there until the blight is past. On the other hand, from the standpoint of the bee keeper, it can be said that in most cases wild bees and other insects would do a large part of the work, both good and bad, without the honey bee, so that we could not get rid of the infection of the blight even if we do dispense with the presence of the bee.

I feel satisfied that in the Eastern United States the honey bee must be looked upon as a useful element in the orchard. I have an apiary in my own orchard. The people in California have had some terrific outbreaks of pear blight and are very much concerned over the matter, and they have reached the conclusion that they can dispense with the honey bee as an orchard pollinizer; that their Bartlett pears will sell all the fruit that is necessary, without insect fertilization. I have never investigated the subject in California. My only knowledge of the case is due to my observation of California fruits. There are so many seedless Bartlett pears from California that it looks as if they were necessarily self-pollinated, and there may possibly be some truth in their views that their pears will sell without cross-pollination. In that case it moves the thing a little against the bee, and if pear blight is rampant in an orchard it would certainly be desirable—at times at least—not to have bees about.

In conclusion, I may say that I have had just barely to touch upon matters of extreme importance that should require an evening for their discussion, but I am prepared to defend my propositions by further explanation, if you find it necessary.

## THE GARDEN.

### A Southern California Garden.

E. H. Ashley, who has a garden in the lower part of the San Gabriel valley, 12 miles from Los Angeles, gives the Orange Judd Farmer an interesting account of its management and the results. The soil is a fine sediment sand, both deep and rich, with water at 15 feet from surface.

The water for irrigation is obtained from the San Gabriel river by means of a dam, the water being conveyed in dirt ditches. The water right is paid for with the land, the water being practically free to users, a nominal charge being made of 15 cents per hour for a head of 100 to 150 miner's inches, or 1160 to 1740 gallons per minute. For garden purposes have used about half a head. The produce was mostly sold to wholesale dealers in Los Angeles and some in Pasadena, to neighbors and a Chinese peddler.

The work of vegetable growing in California is chiefly in the hands of the Chinese, who are behind



the times in regard to methods, making their competition less keen than is usually supposed. The climate of southern California is not quite so favorable for vegetable growth as for trees. Plants take much longer to come to maturity than in the east or south, owing to the cold nights through spring, causing the ground to warm up very slowly. In a rotation I endeavor to follow one crop with another of a different natural order. Pack all produce carefully and honestly, selling my second rate stuff separately at its proper value.

I carefully preserve all horse, cow, chicken and other animal manure, night soil, wood ashes, etc., and compost with vegetable refuse, weeds, etc. Keep it moist enough to promote decay and cover the whole at intervals with a thin layer of soil to arrest the escape of ammonia. I aim to irrigate a little ahead of the crops' needs to insure steady growth.

**PLANTING ALL THE YEAR.**—The garden work was started in October by sowing one-half pound onion seed thickly with seed drill in nursery bed for future transplanting. In November sowed Winnigstadt cabbage in same manner. In December transplanted onion plants into rows 16 inches apart and 4 inches in rows. Set 500 to 600 plants an hour and obtained between 7000 and 8000 good plants from the one-half pound seed sown. Sowed carrot, parsnip, radish, leek, onions for bunching, turnips, salsify and spinach, all in rows 16 inches apart. In January stirred and cultivated about once a week with hand cultivator. Planted out cabbage in rows 6 feet apart and 18 inches in rows, intending to set egg plants between the rows.

Egg plants were sown in the hot bed in February, transplanted in March into 3-inch pots, put back in the frame, and planted out in the open ground in April. The asparagus, rhubarb, turnips, radishes and onions were ready to gather in the latter part of March. The sweet potato ground was plowed, harrowed, leveled and afterward cultivated. Tomatoes and peppers were handled similarly to egg plants. On account of scarcity of irrigation water they were planted in furrows 4 inches deep, to be afterward filled in and the plants gradually earthed up. In May sowed okra, sweet corn, lima beans and melons. Cultivated frequently with 12-tooth cultivator, leaving a fine, level dust mulch. Set out sweet potato plants in May and June.

**THE HARVEST.**—The egg plants began to ripen in July. Plants from seed saved from an extra early fruiting plant last year have grown more vigorously than those from Eastern seed grown side by side, and the former commenced bearing one to three weeks earlier. The egg plants and peppers continued bearing into November. The rainfall from December 20 to November 21 was only  $7\frac{1}{8}$  inches. The temperature of the soil April 1 was 56°, May 1 64°, June 1 65° and July 1 74°. The garden comprised .89 of an acre. The total sales were \$234.74, while there was consumed in the family produce to the value of \$47.49. The labor amounted to \$157.23, seed and plants, fertilizers, sundry expenses, interest and taxes to \$71.95, making the total expense \$229.18, and leaving a profit of \$53.05. If to this is added the above amount for labor, all of which I did myself, the garden has returned to me an income of \$210.28.

## THE FIELD.

### Cultivation and Cultivators.

Mr. E. Welch of Berryessa gives in the Tree and Vine his experience and observation in cultivation, which are very suggestive and should be generally discussed.

**EFFECT OF CULTIVATION ON THE SOIL.**—Whether or not we are disposed to be content to use the same tools and follow the same methods of cultivation our fathers did, we find it impossible to do so with full measure of success, for the reason that conditions have changed. The heavy soils that formerly were rich with plant food and humus have by years of constant cultivation and cropping lost much of their fertility, are getting harder to cultivate and will not retain the moisture as formerly.

The methods of cultivating our orchards are probably exhausting the soil more than the actual crops do—to start the cultivators as soon as the first fall rains come, while the ground is wet; to keep the weeds down, losing sight of the fact that it is being robbed of humus, and that the cultivation and the tramp of horses' feet are forming a hardpan underneath that will eventually impair the productiveness of the orchard. In the spring, while the ground is wet, the root fibers will penetrate this hardpan as they look up for heat and air, but when the dry season comes the hardpan dries out quicker than loose ground, the evaporation is greater and the fiber roots that were furnishing the principal nourishment for the tree are choked, the leaves turn pale and the fruit is small.

Summer irrigation will remedy this to some extent, but it will not keep in or bring back the land to its original condition.

These conditions are not only exercising the minds of the most progressive orchardists here, but also in

the East the question of better tools and better methods is being discussed.

**THE VALUE OF THE PLOW.**—We have no ideal tools to till our soils. The plow that has been in use so long is the best tool we have for general use, but its weight, and weight of dirt it carries, and by cause of the shear getting dull, making a bevel on the bottom of perhaps  $\frac{1}{2}$  inch, which compresses the ground that much at the bottom of the furrows, in addition to weight of plow, and going over the same ground year after year, must necessarily pack the ground harder and harder. Add to this the horses following in the furrow with a weight on each foot as it presses the soil of 600 to 800 pounds, as they tramp, tramp, makes a first-class packing outfit, especially if the ground is wet.

Secretary of Agriculture Wilson, in speaking of farming in the West a few years ago, said that "while the plow was the best tool to be had at that time, there was need for something better." It is the only tool we have that will turn under vegetation and reverse the soil, and its defects must be remedied by using another tool with it.

Some are claiming much for the disk. Some of its objections are: It packs the bottom too much, leaves the ground too loose to retain moisture well, and rides over the hard places.

Of the tools now in use, probably the chisel-tooth cultivator is the best to avoid hardpan.

**THE WRITER'S PRACTICE.**—It has been my practice to plow the orchard 6 or 7 inches deep about the first of March each year, turning under all the weeds I could get, following with clod crusher made of 2x12-inch planks with steel plates on bottom and a tongue. This is arranged so that when the tongue is in the neckyoke the plank will be on proper angle to avoid clogging on front edge. The advantage of the tongue is to steer so as to get close to the trees and not hit them, the whole weight coming on so small a surface crushes the lumps better than does a larger surface.

As soon as the weeds are sufficiently rotted harrow, and a few days later cultivate and keep it up at intervals until July. For seven years previous to last year I have irrigated all fruit in June, and late peaches once later. Last year I irrigated late peaches only.

I had thought that with this treatment and a little commercial fertilizer the soil ought to retain its fertility and humus disappearing to some extent, and a hardpan forming below cultivation. Some will say it was irrigation that did it. Two years ago I had occasion to work a small piece of ground that never had been irrigated, but had always been plowed and cultivated when wet. In plowing it I found a much harder hardpan than where irrigated, and it occurred to me that while water would pack the ground to some extent much of the trouble comes from working the ground too wet.

**PLOWING IN GREEN STUFF.**—Last spring I plowed under a big crop of weeds the last week in February, plowing about 5 inches deep, or as shallow as possible, covering the weeds well, planked and harrowed as before, and cultivated shallow once. I then got a bar of  $\frac{1}{2}$ x2 $\frac{1}{2}$ -inch best steel and had one end turned and hammered out to a point 6 or 7 inches long and about 3 inches wide at the point, then had about 15 inches of the bar hammered to a sharp edge in front. This I attached to one end of a 3x4 scantling, which was used for a tongue, got an axle made with elbows and lever to raise and lower, used wheels from a cultivator, and fixed a seat for the driver. After the ground got so dry that it would crumble I went through the orchard about the width apart of the furrows of a plow, and again crossed it, using two horses. I had expected to go 10 inches deep, but found it was enough for the team to go 8 or 9 inches, or 3 or 4 inches deeper than plowed. After this I used a five-toothed chise-tooth cultivator at intervals until July. This season I expect to get down 10 inches, which I think is about as deep as the roots will permit with safety, except in the middle of the rows.

By this method the packing of the plowsole and the horses' feet at a low depth is remedied, and the subsoiler will lift the subsoil from 4 or 5 inches below the bottom of the furrow. The fine dirt forms a cushion for the horses' feet that prevents the packing underneath. I found that 12 inches cut entirely through the hardpan.

Whether this will do in orchards where the trees are set shallow and the cultivation has always been shallow will probably depend upon judgment. It will pay to try going light at first.

### An Examination of Alfalfa Seed.

**TO THE EDITOR:**—I send you by mail a box of alfalfa seed. You will readily see that it has many small black seeds mixed with the alfalfa seed, and I have been informed that it is the seed of a vine (the name of which I do not know) very fatal to the alfalfa plant. Will you please give me any information as to any feasible method of separating it from the alfalfa seed, and as to the advisability of planting any of the alfalfa seed from the lot of which this sample was taken? I have had the seed for six years. Please inform me if this will affect the degree of its germinating properties.—READER, Monterey county.

### AN EXPERT EXAMINATION.

**TO THE EDITOR:**—The following is the report of test

of alfalfa seed, six years old, sent by your correspondent from Monterey county. The average percentage of germination was 65, which is higher than we expected for such old seed.

The following is a list of the weed seeds found in about four ounces of the alfalfa seed:

Name of Seed.	No. of Seeds.
1. Dodder or love vine ( <i>Cuscuta</i> ).....	32
2. Lamb's quarter or goosefoot ( <i>Chenopodium album</i> ) about.....	1000
3. Old Witch grass—Tickle grass ( <i>Panicum capillare</i> ).....	45
4. Vervain ( <i>Verbena bracteosa</i> ).....	11
5. Sheep sorrel ( <i>Rumex acetosella</i> ).....	7
6. Tar weed ( <i>Hemizonia</i> ).....	7
7. Wild salt bush ( <i>Atriplex truncata</i> ).....	4
8. Mallows ( <i>Mallow parviflora</i> ).....	3
9. Curled dock or sour dock ( <i>Rumex crispus</i> ).....	6

Of the weed seeds found in the sample, the most obnoxious kinds are the first three mentioned. These three, which appear in the largest quantities, are so small in size that they may be cleaned out of the alfalfa seed by very careful and thorough sifting.

The dodder or love vine—a parasitic vine—is the most objectionable of all of these weeds. As it is the cause of much serious injury to alfalfa crops, the utmost precaution should be taken not to introduce it. Dodder seed can only be detected by the use of a magnifying glass. Great care should be taken to identify and remove all of it before sowing the alfalfa.

The seeds of *Chenopodium album* are tiny black seeds, which may be easily sifted out.

Old Witch grass (*Panicum capillare*) is a troublesome weed and should not be allowed to go to seed. If any of it is found growing in the alfalfa field, the crop should be cut for soiling or silage before the grass goes to seed, in order to get rid of it.

The "sheep sorrel" is also a troublesome weed.

ALICE F. CRANE,

Tester and Examiner of Seeds.

Berkeley, March, 1902.

## THE VETERINARIAN.

### Veterinary Education in California.

By DR. ARCHIBALD R. WARD, Instructor in Veterinary Science and Bacteriology, University of California, at the State Veterinary Medical Association, San Francisco, March 12, 1902.

The prevalence in California of many serious infectious diseases among domestic animals constitutes a serious menace to the prosperity of one of the largest industries of the State. The control of these diseases so far as they concern public health, and so far as they are a matter in which the State can legitimately take a hand, is in the way of being well handled if the policy adopted by our State Veterinarian receives the success that it deserves. But even with an efficient county veterinarian in each county there would be more opportunities for private practice than the county veterinarian could attend to in addition to his official duties. The vast amount of money invested in the live stock industry of the State indicates that there is also a possibility for fair remuneration for men who can equip themselves sufficiently with a knowledge of their profession to successfully cope with the diseases. The growing animal industries of the State give rise to the conclusion that in the future we will need a larger number of well-trained men.

The responsibility of upbuilding the profession by educating the veterinarians of the future rests upon the practitioners of to-day. If veterinary instruction on the coast is not all that it should be, we are to blame for not making it better. I believe that the problems connected with veterinary instruction have the most intimate bearing upon the upbuilding of the profession and bring this matter to the attention of you who have the best interests of our profession at heart.

**THE IDEAL VETERINARY COLLEGE.**—There are certain questions of policy that deserve careful consideration in organizing a veterinary college. It is the belief of the speaker that the faculty of the ideal college would be composed of successful practitioners who were attracted to teaching by a salary equal to their previous income from private practice, taking into consideration the relief from unseasonable hours of work afforded by college life. Their whole time would be available for instruction and under no consideration would private practice be indulged in during term time. The professors of equine, bovine and canine practice would hold free clinics daily, at which the students would perform the operations under the direction of the professor. Each member of the veterinary faculty should be exclusively employed by the college and be in no way dependent upon private practice. In the case of our ideal college no practitioners would be located near enough to the college to lose business on account of the free clinics. Students in surgery would receive their introduction to surgical work by operations upon anesthetized, worthless subjects, which for humanity's sake would be dispatched at the conclusion of the surgical exercises. The skill and self-possession of the surgeon



are acquired only by actual practice upon living tissues, and the sooner this is acquired the better.

The students would derive inestimable benefit from the intimate association with practical instructors, who themselves had been buffeted about in private practice. The instructors during their leisure hours would conduct research work for the upbuilding of veterinary science and would furnish every opportunity for advanced students to aid in the same. In short, the institution would be of value in solving some of the vexed problems which the practitioner so frequently encounters.

The course would consist of at least three years of nine months each, during which time the student would obtain a thorough training in those subjects ordinarily emphasized in veterinary instruction. In addition he would acquire a working knowledge of bacteriological laboratory methods so essential to a proper understanding of the principles underlying aseptic and sanitary science. His future duties as a sanitarian demand that he acquire an intimate knowledge of the pathology and bacteriology of the infectious diseases of the domestic animals, and indirectly of some of those affecting man.

In view of the serious studies that the veterinary student is required to pursue in college, he should be required to possess a fair high school education. This is in order that he may possess the preparatory training necessary to a thorough understanding of the studies pursued in college. Preferably, he should possess a reading knowledge of German in order to render accessible to him the latest information published on veterinary topics in that language.

The college library would be supplied with files of the current veterinary journals and their back numbers, together with standard text books. Money would be available to purchase the latest and best books on subjects pertaining to veterinary science.

**ENDOWMENT.**—The ideal college would be amply supported by private endowment or by public funds. If the community recognized the necessity and value of having well-trained veterinarians to minister to their live stock interests, the people would willingly appropriate public funds for the purpose just as they do to their State institution, so that it may turn out good school teachers.

The institution would be free from the harassing question, "Will we make expenses?" Since it is not dependent upon students for its income, there would be no pressure exerted to attract students by making concessions detrimental to the maintenance of a high standard of instruction. There would be no necessity to abbreviate the curriculum, to admit ill-prepared candidates, to graduate poorly prepared students, or, worst of all, to sell diplomas.

**OUR AMERICAN COLLEGES.**—We have considered somewhat in detail the characteristics of an ideal veterinary college. Do we in America possess such institutions? With one exception we have nothing that even attempts to attain the standard outlined.

From necessity—not choice—our veterinary colleges are compelled to run upon the money making plan. None of them have the financial support necessary to monopolize the time of the most successful practitioners. They must be content to employ a few men at salaries ranging in most cases from \$800 to \$1800 a year. Fortunate indeed is the veterinary college teacher who earns \$3000 a year. Not many men who have made a success of practice can afford to make the sacrifice of engaging in college work. Some, however, do make this sacrifice in consideration of their love of the work or their health.

In default of regularly employed teachers much of the instruction is imparted by regular practitioners who, at considerable sacrifice of time, lecture and give clinical instruction in connection with private practice. Without disparaging the good results of this intimate contact with the practitioner, I cannot refrain from pointing out the undesirable features of the system. The student cannot, when operating upon a private case, enjoy the same freedom that he would upon a free clinic case. There is a constant natural tendency upon the part of the practitioner to perform the operations himself, especially in important cases. The participation of active practitioners in the instruction bars out the desirable free clinic. Nevertheless, veterinary education imparted by regular practitioners should not be disparaged on account of the restricted time devoted to it, for the instruction imparted is intensely practical. Veterinary instruction by practitioners with paid clinic is better than instruction by inexperienced men with free clinic. Veterinary colleges located at a distance from large cities, where practitioners are not available to assist in teaching, are working under enormous disadvantages.

**THE CALIFORNIA SITUATION.**—Expediency must guide the solution of the problem of veterinary instruction confronting us in California. The ideal veterinary college will never come to pass if the profession leans back without exerting itself to do the best possible under the circumstances. We cannot hope to start with a large salaried faculty independent of private practice. As a gain to offset this, we have in San Francisco and Oakland high-minded, skillful veterinarians who are ready and willing to proffer their services, together with the opportunities for clinical work afforded by their practice. There is already in existence the legal framework of a college,

to say nothing of the well-arranged building among the Affiliated Colleges group, awaiting an occupant. Subjects necessary for the education of the veterinarian are already taught in Berkeley. Among the available material are courses in chemistry, histology, stock feeding and breeding, bacteriology and veterinary sanitary science. With the exception of anatomy, there is already available instruction sufficient to occupy the freshman year at Berkeley. The outlook for two more years of instruction in San Francisco is encouraging. Reference has already been made to the unexcelled opportunities for students to partake of the ripe experience of successful practitioners in San Francisco. If such a scheme of veterinary instruction be deemed desirable, those undertaking it must do so not in the hope of gain, but as a sacrifice for the good of the cause.

**STANDING OF THE VETERINARIAN.**—While the United States recognizes the usefulness to the community of well-educated physicians, we veterinarians have not yet earned that respect of the community that carries with it provision for liberal professional education. People in general do not recognize the intimate relation that our profession bears to the health and wealth of the nation. In Europe to-day all veterinary colleges are aided by the State. As a result, the instruction is on a high plane befitting a dignified and honorable profession. The governments of Europe consider colleges for the education of veterinarians as good, economic investments, just as agricultural colleges are regarded there and in the United States. The student is trained not to serve the horse and dog owner alone, but, in addition, is trained to recognize and control the infectious diseases of cattle, sheep and swine. The trained veterinary sanitarians are indispensable to the success of animal industry in crowded Europe.

In America, New York State alone has recognized the need of State support of veterinary instruction. The New York State Veterinary College at Cornell University is supported by an annual appropriation of \$25,000. The tuition is free to residents of the State. If the fifty students each paid \$100 a year tuition the income would be \$5000, or one-fifth of the expense of operating the college. These figures rather discourage the prospect of operating profitably a veterinary college upon the income afforded by tuition fees.

Money is a vital need of the successful colleges of the present time. The great institutions of the world are philanthropic in character, in that they are supported largely by private gifts or Government subsidies rather than by the tuition fees of the students. Under the present order of things the ability of a college president to secure financial support for his institution is not among the least of his desirable characteristics. The enormous total of benefactions to education during the past year is a most significant indication of the trend of events in the educational world.

Answers by Dr. C. W. Fisher of San Mateo.

#### CALF WITH SKIN TROUBLE.

**TO THE EDITOR:**—I have a calf about six weeks old that has had a breaking out for the past week and it has become so bad that the hair has come off in some places. Aside from this ailment it seems all right and is growing. It has been fed on skimmed milk and mush made of middlings. What treatment would you recommend?—**OLD SUBSCRIBER, Loomis, Cal.**

Your calf may be troubled with lice, itch or nettle rash. Look for lice. If the skin is covered with a dry crust, rough and wrinkled around the eyes, it probably is itch. If the affected patches of skin are raised, sore and inflamed, and the hair comes off, it may be nettle rash.

Wash the parts with soap and warm water to remove crusts and scabs. Then apply creolin, two teaspoonfuls to pint of water, once a day. Follow by an ointment made of one part glycerine, one part oil of eucalyptus to eight parts oxide of zinc ointment.

#### MARE WITH A COUGH.

**TO THE EDITOR:**—Will you kindly tell me what to do for a mare ten years old that seems to have a chronic cough. It only bothers her when she works hard, or breathes any dust. Otherwise she is in good health.—**SUBSCRIBER, Alma, Santa Clara county.**

Your mare may have a touch of the heaves. Feed sparingly of hay and moisten it before feeding to allay the dust. It is important not to feed much hay to horses having a chronic cough. Give her some grass. Keep the bowels open freely. Give teaspoonful of raw linseed oil on grain once a day, or feed some oil cake. Give tablespoonful of solution of potassium arsenite twice a day on grain.

To temper or harden steel it is cooled or chilled rapidly from a temperature of over 1000° F. If the metal is desired soft it is heated to the same high degree of temperature as above and is then cooled very slowly. With brass the processes are reversed. Quick cooling of the heated brass produces a soft malleable metal. To make brass hard, and to give it temper, it must be reheated and then cooled very slowly. It is by this slow cooling that the Chinese prepare the metal of which they make their gongs.

#### Industrial Notes.

A MINER'S INCH should properly irrigate five acres.

THE velocity of sound in water is 4.9 miles per second.

AN electric current can be used to free water of some impurities.

THERE is no California State tax on the issue of stock in corporations.

A TANK 16 feet in diameter and 12 feet high will contain 13,500 gallons.

A METRIC TON is 2204.6 avoirdupois pounds. An English long ton is 2240 avoirdupois pounds.

AN ALLOY that expands in cooling is made of 75% lead, 16 $\frac{1}{2}$ % of antimony and 8 $\frac{3}{8}$ % of bismuth.

ASPHALTUM is the final residue of refined California petroleum, representing from 20% to 40% of the oil.

AN engine of 40 effective H. P. can pump 4000 cubic feet of water from a depth of 365 feet in seventy minutes.

THREE GALLONS OF WATER per minute will run through 1200 feet of  $\frac{3}{8}$ -inch horizontal pipe under 50 feet head.

A  $\frac{1}{2}$ -INCH NOZZLE, under fifty-two pounds pressure per square inch, will discharge 13.43 gallons of water per minute.

MANAGEMENT is about 50% of any enterprise, whether it be running a wheelbarrow, a mint, a shop or anything else.

A "STANDARD CANDLE" is one that consumes 120 grains of spermaceti per hour, made six to the pound, and  $\frac{1}{8}$  inch diameter.

AN ordinary burn from an electric current can be relieved by application of a solution of one part nitric acid and seventy-five parts water.

THE weight of water in pounds that a 1-foot length of pipe will hold can be obtained by squaring the diameter of the pipe in inches and dividing by 3.

DISSOLVE 3 pounds salt and 1 $\frac{1}{2}$  pound sal ammoniac in a gallon of water, and the mixture will be as good as that in hand grenades for fire extinguishing purposes.

WHERE a mining claim exceeds the statutory length it is not void, but the locator will be allowed to hold a claim 1500 feet long; the remainder will be rejected.

A DAM lower down upon a stream cannot retard the water in the tailrace of another dam higher up the stream, if the back water of the lower dam does not reach into the tailrace of the upper dam.

TIN-LINED AND LEAD-LINED WROUGHT-IRON PIPE is made by pouring the melted tin or lead into the iron pipe. The makers say that the result is a union of the two metals that is not broken apart even when the pipe is bent.

ONE pound of charcoal heats seventy-three pounds of water from 32° F. to 212° F. One pound of anthracite coal heats seventy pounds of water in the same way, and one pound of dry wood heats thirty-five pounds of water the same.

TO FIND the quantity of water elevated in one minute by a pump the piston speed of which is 100 feet per minute, square the diameter in inches of the water cylinder and multiply by 4, the product in the number of gallons per minute.

In a tank 10 feet diameter at the top, 12 feet diameter at the bottom, 12 feet deep, fed by a pump discharging 150 gallons water per minute, and having when pump is started a depth of 2 feet of water, it would take forty-six minutes to fill the tank.

THE oil pipe line of the Pacific Coast Oil Co. is 44 miles in length, a 2 and 3-inch pipe from Pico canyon to the sea at Ventura, Cal., delivering 600 barrels 41° oil every twenty-four hours, under a head of 1900 feet. The highest undulation is 200 feet.

WIDE TIRES are all right for earth roads, and, to some extent, for macadam roads. When tires exceed a certain width, however, they are likely to bear unevenly, the weight being thrown first on one edge and then on the other, as the wheels pass over the more or less uneven surface of the road.

In a Sterling boiler the water should be carried as low as possible on account of the back drum and steam delivery. The amount of water carried on top of the tubes in a horizontal boiler should be about 3 inches on the front end, and, if the boiler is set properly, about 1 inch lower in the back end. Generally a lime water will not foam.

THE first process in refining petroleum is selective distillation, during which the petroleum is passed through various stills at different temperatures, the temperature of the petroleum being increased at intervals during the process. At the lowest temperature gases are given off, which remain as such at the ordinary temperatures of the atmosphere. Then, as the temperature is increased, petroleum, ether, benzine, C naphtha, B naphtha, A naphtha, illuminating oil (kerosene), lubricating oils, paraffine wax, tar and coke come off in the order named. They are the so-called naphthas that are of special interest to the gasoline engine user. C naphtha ranging in density from 80° to 68° Baume, is that which is used on a gasoline engine, the common densities for the purpose being 76° to 74°, the latter being known as stove gasoline. Each of these petroleum products may be further subdivided by selective distillation, into substances having different densities. In fact, the ordinary gasoline of commerce is in reality a mixture of various hydrocarbons of different densities, the average density of the mixture being that at which the gasoline is rated. It is this circumstance that is the cause of nearly all the troubles with carbureters, as it is the tendency of the lighter products contained in the mixture to evaporate before the heavier products.



## Agricultural Review.

### ALAMEDA.

**PROTEST AGAINST SHEEP TAX.**—Livemore Herald: The local sheep owners are considerably exercised over the action of the Supervisors of San Joaquin county in imposing a license tax of 5 cents per sheep. This is considered rank injustice by them, and they are not only protesting vigorously, but may take the matter into court. Of the many thousand sheep which are pastured on the hill ranges of San Joaquin county in winter and on the river islands and tule basins in summer, a great majority are owned in this valley, which forms a part of Alameda county. As most of the local flocks are in San Joaquin on the first of March, they are assessed in that county. The San Joaquin authorities have evidently found the Alameda sheep men such a good thing that they have determined to go a little further with a view of extracting a little more revenue from the men who have borne their exactions in the past without complaining. Our thrifty neighbors may find, however, that they have overreached themselves in this matter.

### BUTTE.

**GUARDING AGAINST FROST.**—Chico Record: Hubbard & Earl are engaged in manufacturing for John Parrott sheet iron pots which will be used as receptacles for oil, and in which the oil will be burned to ward off frost. In each of these pots there will be placed a half gallon of crude oil and one-quarter of a pound of cotton waste, which will absorb the oil. In southern California, where this system has been used with a considerable degree of success, one of the fire pots is used for every four orange trees, but the Parrott people propose to be on the safe side and place a pot at each tree.

**CHANGING FROM WHEAT TO CATTLE.**—Gridley Herald: Wm. Grant, the manager of the Balfour-Guthrie lands, northwest of this place, is engaged in surveying the old Garrett Keppel ranch belonging to his company. The lines are being run so that the place can be fenced. It is said to be the intention of the Balfour-Guthrie Co. to abandon wheat raising on the property mentioned and to use it as a cattle ranch. Hence the fence.

### FRESNO.

**LARGE SMYRNA FIG ORCHARD.**—Republican: Markarian Bros., the well-known fig packers, will set out 450 acres in Smyrna figs, and have already contracted with George Roeding for 9000 trees. The land, which has been devoted to wheat, is said to be very well adapted to the culture of the fig. George Roeding also intends to set out 150 acres to Smyrna figs this season.

### KINGS.

**A GOOD SHOWING.**—Hanford Sentinel: Al P. Denny, formerly of Butte, but now of Kings county, has made some good showings on his 320-acre ranch 6 miles west of Angiola and 24 miles south of Hanford, which shows the richness of soil and the great possibilities of the land in that section. Mr. Denny came to this county three years ago, and when he bought his ranch the place had never been plowed or cultivated and was covered with a growth of tules from 2 to 3 feet high. He got rid of the tules by burning them off. Then he sowed alfalfa seed on the ground and harrowed it in with just an ordinary peg-toothed harrow. This was the only cultivation the ground had, as Mr. Denny considered that it did not need plowing owing to the looseness of the soil. The alfalfa in the spring, being quicker in starting to grow, got the best of the tules and choked them out. Mr. Denny says, the first year after seeding his place to alfalfa he cut it once for hay and got over 500 tons. The next crop he allowed to seed and from it secured twelve tons of seed. Besides this he had considerable stock on the place.

**BIG PRICE FOR VINEYARD.**—The Lucerne vineyard, near Hanford, was sold to George West & Son of Stockton Wednesday. The vineyard comprises 1000 acres of bearing vines. The consideration is reported to be \$250,000.

### LOS ANGELES.

**LARGE AND ACTIVE BARLEY MOVEMENT.**—Pasadena Star: One of the biggest movements in barley that a Pasadena man has ever been interested in is now on in the vicinity of Oxnard. E. F. Kohler, the East Colorado street photographer, has a large ranch at Springville Hill, planted chiefly in barley, with five acres in beans. One day last week an earthquake shook the land and left a crevice about 12 feet wide, and it is widening at the rate of 1 foot a week. By the time the barley on this field is ripe the probability is that the field will be on some other man's land. This raises the question of who will own the land, Mr. Kohler

or the man on to whose land the field moves? Mr. Kohler is of the opinion that it is his crop.

### ORANGE.

**ENTHUSIASTIC OLIVE GROWER.**—Santa Ana Blade: David Hewes imported a gang of Chinamen from Los Angeles Saturday to gather his crop of olives on his ranch at El Modena. Mr. Hewes has 100 acres planted to olives, but sold the crop of twenty acres to buyers, which leaves eighty acres to gather. He expects to have fifty or sixty tons and will ship them to Los Angeles for pickling. Mr. Hewes is very enthusiastic over olive growing and believes it will eventually be an important industry. By the formation of the Los Angeles Central Olive Association, organized in Los Angeles Thursday, Mr. Hewes thinks growers will come nearer getting a true value for their olives than they have in the past, and that it will be the means of increasing interest in olive growing. According to Mr. Hewes, the growers of southern California have been at the mercy of two buyers in Los Angeles, who have been making the prices olives should sell at. Thirty-five dollars per ton delivered in Los Angeles is the highest figure ever offered by these parties, and at this price Mr. Hewes maintains that the grower cannot more than clear himself.

### SAN BERNARDINO.

**SUIT ON SCALPS OF COYOTES.**—Sun: The Farmers' Exchange Bank commenced a suit yesterday to collect from the State something over \$2000 due for the killing of coyotes in the county. There are just 100 pages in the complaint, and in it there are ninety-eight separate and distinct causes of action, each cause being a separate claim. On Jan. 3, 1893, the Supervisors passed a resolution offering to pay \$5 for every coyote scalp, thinking in this way to rid the vicinity of coyotes. The result was just what had been expected, but it acted in two ways. The coyotes were certainly being cleaned out at a rapid rate, but the available funds for paying the \$5 reward were being exhausted with amazing rapidity. The result was that the resolution was rescinded and the Supervisors refused to audit any more claims. The Farmers' Exchange Bank proposes to force the State to satisfy these claims.

### SAN DIEGO.

**STORING LEMONS.**—San Diego Union: The recent rain has given the lemon growers fresh courage, as it has saved many trees which seemed in a fair way to be lost on account of lack of moisture. A number of orchardists are trying the experiment of storing lemons, pending better prices. It is contended that, if properly handled, lemons can be kept in fine condition from six to eight months.

**WILL BUILD COCOONERY.**—Union: Thos. J. Swayne of Paradise valley will probably be the first man in this section of the country to put up a cocoonery. He is now considering the plans for such an enterprise. With Mr. Swayne the raising of cocoons is no longer an experiment. His idea is for the people of this county to go ahead and plant the mulberry trees and then see about getting a silk factory. This and other things, he says, should be done with the silk factory in view. Mr. Swayne has about 5000 mulberry trees planted, most of them being at Coronado, at the corner of First and A streets. The rows are 6 feet apart, the distance between the trees being 3 feet. The 5000 trees cover about three acres of ground. He will plant 2000 more in the near future, having fully decided to go into the business on a large scale. On Point Loma a practical test of the silk business is being made by an organization known as the Point Loma culture industries, the same being under the direction of E. A. Neresheimer, manager of the Association. They have about 1000 mature trees planted and 400 young ones in the nursery. They are raising cocoons and reeling silk.

### SAN JOAQUIN.

**PHOSPHORUS SQUIRREL POISON.**—F. Ritter, in Lodi Sentinel: The Galt cemetery was alive with squirrels. I put out one application of phosphorus squirrel poison and it killed every squirrel; was over the ground two months later and there was not a sign of a live squirrel there. Also, had it put out on my ranch near Lockeford; four weeks later there was not a sign of a squirrel there. Following is the formula:

Wash 2½ gallons of wheat; let it drain. Take a clean 5-gallon can. Put in can 1 pint of syrup and ½ pint of water. Heat it over a slow fire in open air. Stir in two sticks of phosphorus while syrup is hot. Stir in the 2½ gallons of wheat. Stir thoroughly to get poison on every kernel of wheat. Stir in some flour; then add a little cornmeal to separate the wheat. Stir thoroughly and let cool.

In putting out the poison scatter it well

and put out plenty, so all of the squirrels can get some of it. It will kill every squirrel that eats of it. Put out early in the morning in any kind of weather.

**MORE IRRIGATION.**—Five miles of the new main line of the canal will be completed in the southern part of San Joaquin county the middle of next week, and between 2500 and 3000 acres of fine land will be brought under a new irrigation system. This is the first extension of the Stanislaus and San Joaquin Company ditch, which takes its water out of the Stanislaus river, and was built to the Ellenwood place, southeast of Stockton, some years ago. Recently the farmers entered into a contract with the irrigation company to build the ditch and pay \$2.50 an acre each year for the water, the company to put in all culverts, drops, gates and bridges.

**GOOD PROFIT FROM BERRIES.**—Lodi Sentinel: At the ranch of Paul Sturla, a quarter of a mile west of town, is an acre of ground in Logan berries that brought its owner \$300 last season.

### SANTA BARBARA.

**EARLY BEET PLANTING.**—Santa Maria Times: Mr. J. W. Atkinson, superintendent of the Union Sugar Co. at Beteravia, reports 1000 acres of beets ready for thinning, and a large force of men will be put into the fields at once. Planting began early in January and has continued right along, and by the first of April another 2500 acres will be ready for the thinners, or the greater portion of it. This is the earliest work of this character in the State, and so far as known in the United States, and the management is highly elated over the bright prospects.

### SANTA CRUZ.

**FRUIT NOTES.**—Watsonville Pajaronian: The rains have kept back the opening of the strawberry season this year, but growers hope that crop, quality and market prices will more than compensate for the postponement of "opening day." —There are 2500 boxes of Watsonville Newtowns on the Cunard steamship Etruria which is at the Azore islands in a disabled condition. The delay is apt to cause a loss in that fruit. —Three carloads of trees—mainly apples—have been shipped into Pajaro valley from outside points this winter, and the local nurseries have done an unusually heavy business. When "the returns are all in" it will be found that this has been one of the heaviest orchard planting seasons in Pajaro valley's history.

### SHASTA.

**CATTLE STARVING ON BALD HILL RANGES.**—Redding Free Press: The famous pastures of the Bald Hills are fit only for jackrabbits and burros. During the month of storm the cattle and horses which overcrowded the ranges have nibbled away all the grass and shoots, and dead carcasses everywhere show that the pasturage is insufficient to sustain life in time of storm and heavy losses must follow.

### SONOMA.

**MODEL CHICKEN RAISER.**—Herald-Tribune: Ed Whitson of this place has a model chicken raising establishment. There are some 1300 chickens in all stages from broilers down to those of a couple of weeks old. The chickens are divided off into wards supplied with brooders, heating apparatus, feed boxes, etc. All are hatched in incubators and then placed in the division wards until they reach the age of broilers. They are then shipped to Petaluma, where they are delivered to the chicken dealers to be shipped to San Francisco. Chicks come from the incubators in batches of from 350 to 400. When they reach the size of broilers they are sold, bringing as high as 50 cents each. A chick reaches the proper age in about three months.

### SUTTER.

**FERTILIZING ORCHARDS.**—Sutter County Farmer: At the Starr orchard, above town, experiments are being made with commercial fertilizers, nitrate of soda and a phosphate preparation. The phosphate is being put around prune and plum trees before the first plowing, about five pounds to the tree, and then plowed in. The nitrate of soda is put on before the last cultivation around apricot and pear trees, about one pound to the tree. Over two tons of the fertilizers are being used. On the Skinner orchard adjoining similar experiments are being made. B. F. Walton, who tried these fertilizers with success last year, has ordered five tons for use this year. Most of the fertilizers are placed around the older trees to put new life into them and insure more and better fruit.

**SHOOTING THE FROST AWAY.**—Marysville Appeal: G. W. Harney, manager of the Abbott orchard, has made application to the War Department at Washington for the use of three cannons, or twelve-pounders, to be used in a series of experi-

ments this spring in fighting frosts in the orchards under his supervision. Cannon firing to prevent frost was first tried in France as a means of protecting tender vines, and the results obtained are said to be exceedingly satisfactory. The principal upon which the cannon firing is based is that frosts form only on calm mornings and that by firing heavy blank shots from a twelve-pounder the air is agitated and the formation of frosts prevented. If the cannons can be obtained the experiments will be tried at the Abbott orchard. "There is one thing about it," said Mr. Harney, "if we do get the cannons, our neighbors will know that a frost is coming, all right."

### TULARE.

**NOT A BAD RANCH TO OWN.**—Times: J. W. Nelson will market full twenty tons of apples this year from his ranch among the pines. Carr Wilson takes them to the club run with a string of thirteen burros and Mr. Nelson then hauls them to Porterville. He gets 90 cents now for boxes that weigh a little less than thirty pounds.

**ANTELOPE ORANGES.**—Visalia Delta: Thomas Davis of Antelope valley boasts of raising some of the finest oranges in this county and that the soil in his part of the valley is especially adapted for citrus fruits. From one orchard, consisting of 120 trees, Mr. Davis sold \$535.20 worth of oranges. He says he picked from these same trees ten boxes which were donated as presents. That is a pretty good yield from trees not quite five years old.

**ALFALFA NEEDS NO IRRIGATION.**—Reedley Exponent: Several hundred acres of land in the vicinity of Dinuba are being seeded to alfalfa this season. None of it will be irrigated, as past experience has shown the owners that irrigation is no longer necessary.

**LUCERNE VINEYARD SOLD.**—Register: The great Lucerne vineyard, north of Grangeville, the especial pride of the late Timothy Paige—more than 1000 acres of solid vines—has been sold to West & Son of Stockton, the wine men, for \$252,000, and so that acreage is permanently out of the raisin market.

## Horse Owners! Use

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A Safe Speedy and Positive Cure

The Safest, Best ELISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular. THE LAWRENCE-WILLIAMS CO., Cleveland O.

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Is the time to place these supports on your trees.



Don't wait until your trees are bent out of shape and broken with weight of fruit. Cheaper than the cheapest. Economical, durable, perpetual.

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AGENTS WANTED.



## THE HOME CIRCLE.

## Inheritance.

Lo, what am I? A patch of things,  
Mere odds and ends of lives flung by  
From age-long rag-bag gatherings,  
Picced up by Fate full thriftily—  
Somebody's worn-out will and wit,  
Somebody's habits and his hair.  
Discarded conscience, faith once fair,  
Ere time, the moth, had eaten it;  
My great-grandfather's chin and nose,  
The eyes my great-grandmother wore,  
And hands from some remote—who  
knows?—

Perchance prehensile ancestor;  
Somebody's style, somebody's gait;  
Another body's wrist and waist,  
With this one's temper, that one's trait,  
One's taste, another's lack of taste;  
Feelings I never chose to feel;  
A voice in which I had no voice,  
Revealing where I would conceal  
Rude impulses without a choice;  
Faults which this forefather or that  
Unkindly fostered, to my ill,  
With others some one else begat,  
And made the matter worse still.  
They chose, these matters of my fate,  
To please themselves, bequeathing me  
Base pleasures in the things I hate,  
Liking for what misliketh me.  
Out of the ashes of their fires,  
Out of the fashion of their bone,  
They fashioned me, my mighty sires.  
And shall I call my soul my own?

Ay, horrowed husk, head, heart and  
hand,  
Slave on and serve me till we die!  
I am your Lord and your Command!  
But only God knows—what am I.

—Grace Ellery Channing.

## A Yellow Letter.

A yellow letter! Age lies on its face,  
The wither of the years!  
'Tis priceless gold! And the immortal  
grace

Of laughter unto tears!  
And oh, it reaches back to days of love  
And joys that only youth can tell us of!

A yellow letter! Hold its priceless gold  
A halm for aye of fears!  
A fruitage of the noonings yet untold  
When life's new morn appears!  
The rain of roses round it and the love  
That angel voices, whisp'ring, tell us of.

—Fanny Kemble Johnson.

## Jasper Dane's Caller.

The door creaked very slightly, but it  
jarred on Jasper Dane's nerves. He  
looked up with a frown.

"Is this Mr. Dane?"

A young woman was framed in the  
doorway.

Jasper's frown slightly faded as he  
caught sight of her. She was a pretty  
young woman and charmingly gowned,  
and she wasn't more than one and  
twenty. Jasper avoided the woman's  
page of his paper. He couldn't have  
told what the young woman in the door-  
way wore, but he recognized the fact  
that it was a combination that seemed  
to be just suited to her.

"Mr. Dane, the editor?"

Jasper, pencil in hand, bowed again.

The young woman advanced into the  
apartment.

"You are much younger than I sup-  
posed you to be," she said.

Jasper's eyes opened wider.

"I am not quite sure that I ought to  
take that as a compliment," he said. He  
even smiled. Then the pressing charac-  
ter of his work reminded him. His fea-  
tures stiffened. He raised his pencil  
again, and looked at the girl severely.  
"It's the very first time I was ever  
in an editor's sanctum," she said as her  
glance took in the dingy walls and the  
littered desk.

"How can I serve you, madam?" in-  
quired Jasper.

The girl looked at him and she looked  
at the chair beside his desk.

"Thank you," she said and sat down.

Jasper sighed and stared at the half-  
written sheet before him.

"Are you sure it is the editor you  
want to see?" he asked. "The society  
editor is at the lower end of the hall.  
So are the musical editor and the art

department. So is the dramatic edi-  
tor."

"I came to see you," said the girl.

Jasper slightly flushed.

"Thank you," he said. "I am on ex-  
hibition at all hours. Is that all?"

The girl shook her head.

"Do you own the paper, too?" she  
asked.

Jasper frowned.

"No," he replied. I believe it is gen-  
erally understood that Mr. Linas Lam-  
son is the paper's owner."

"The railway president?"

"Yes."

"Has he any children?"

"One."

"Boy?"

"No, a girl. A little girl who is study-  
ing abroad."

"How old?"

"I don't know. Mr. Lamson speaks  
of her as his little girl." Jasper was  
getting fidgety. "I beg your pardon,"  
he added, "but you have not told me  
how I can serve you."

"No," she said, "I haven't."

A brief silence followed.

"Am I to infer that you are getting  
up a society directory?" Jasper in-  
quired with a slight flavor of sarcasm.

"No," said the girl, "the inference  
would be wrong. Nor do I want my por-  
trait on the society page. No, I have  
no tickets to sell and no subscription  
paper to sign. I came here to see you.  
A dear friend said, 'You must see the  
editor of the Dispatch. He's well worth  
your while.'"

Jasper couldn't help flushing again.

"Am I reckoned among the leading  
sights of the town?" he asked.

"No," the girl gravely replied.

"You come between the geyser fountain  
and the zoo."

Jasper laughed.

"And do you come up here to tell me  
that?" he asked.

"That, for one thing," said the girl.

"I don't suppose my presence here  
bothers you in the least, does it?"

"Madam," said Jasper, "I am a  
reckless user of the truth. Your  
presence prevents me from attending  
to my duties."

"Perhaps this is your busy day?"  
said the girl, innocently.

"My days are all more or less busy,"  
said Jasper.

"Then, of course, it is just as con-  
venient for me to call to-day as any  
other day," said the girl.

Jasper looked at her with a comical  
expression. He was a little near-  
sighted, and as was his custom with  
callers, he had scarcely given her an  
appreciative look when she had en-  
tered. Now, at shorter range, he saw  
that she was much prettier than he at  
first supposed. She certainly was a  
charming girl. A troubled look came  
into Jasper's eyes.

"I beg your pardon," he said, "but  
may I remind you that you haven't  
stated your business with me?"

The girl looked into his eyes with a  
clear, frank gaze. Then she slightly  
smiled and slowly removed an elastic  
band that held the small package she  
bore in one neatly gloved little hand.  
Jasper took quick advantage of her  
averted gaze to pull down his cuffs and  
make a quick pass at his twisted tie.

"I have written something," she said,

"and I want to submit it to you."

Jasper felt himself weakening. Ord-  
narily he would have taken the manu-  
script and hastily scribbling the writ-  
er's address on it, would have tossed it  
aside with the remark that he would  
communicate with the writer by mail  
concerning it—and then he would have  
resumed his work. Now he hesitated.  
His pencil dropped from his fingers.  
He straightened up a little.

"What is the nature of the article?"  
he asked in what he fancied was an in-  
different tone.

"It isn't an article," said the girl.  
"Do I look like a person who would  
write an article?"

She seemed to challenge his scrutiny.  
Jasper couldn't resist the temptation.  
He leaned a little farther back.

"It isn't always possible to judge by  
the appearance," he said.

"But I fancied article writers were  
always old, and—and fussy, and—and  
cranky," said the girl.

"There are exceptions," said Jasper.

"There must be exceptions."

"I suppose you know," said the girl.

"But it isn't an article."

"You arouse my worst fears," said  
Jasper as the girl spread out the manu-  
script.

"I think I understand what you  
mean," she said.

"I am glad you do," said Jasper.

"And I'm afraid your worst fears are  
confirmed," she said.

Jasper sighed.

"Then it is verses?" he said.

"I supposed it was poetry," said the  
girl.

"They always do," said Jasper.

The girl looked up at him with a  
pretty grimace.

"You are not a bit encouraging," she  
said.

"It's the better way," said Jasper.

"And yet you write verses yourself,"  
said the girl. "And get them printed,  
too."

"Perhaps it is because I haven't a  
friend honest enough to dissuade me,"  
said Jasper. "I have had no time for  
that sort of nonsense lately, however."

"That's a pity," said the girl.

"Don't think to soften me in that  
way," said Jasper.

"I like those lines beginning. 'She  
came upon me unawares,'" said the  
girl. "I know them by heart. 'She  
came upon me unawares, I turned and  
she was there.'"

"I beg your pardon," cried Jasper.  
"It is your lines that are under con-  
sideration. Pray produce them."

The girl gave him a sidelong glance.

"Did she come upon you unawares,  
Mr. Dane?"

Jasper caught the glance and slightly  
flushed. His look grew troubled again.

"I live in hopes," he said.

"That's enigmatical," laughed the  
girl. "It shows you are not sure."

"I must object to your manifest in-  
tention to throw me into a sentimental  
mood," said Jasper. "It will not help  
you."

The girl laughed and passed the man-  
uscript to him.

"I know you will like it," she said.

"Why are you so certain?" Jasper  
asked.

"Because I haven't written on both  
sides of the paper," said the girl.

Jasper bent over the manuscript to  
hide his smile. Then his look changed.  
The smile faded. He read the lines with  
great care. Presently he looked up.

The girl had been regarding him in-  
tently. She met his eyes with an in-  
quiring glance.

"You want me to be frank?" he  
said.

"Of course."

"The lines are quite too sentimental.  
They are of the old school where senti-  
mentality reigned. Nowadays we bluntly  
call it gush."

"But it's not all bad, is it?" queried  
the girl.

"By no means," replied Jasper. "The  
execution is good. If the fripperies and  
affectations were dropped it would be  
very passable. If you would heed my  
advice—they never do—I might be  
tempted to ask you to try again."

He folded the manuscript and handed  
it to her.

"Thank you," said the girl.

"I am sorry if my judgment seems  
harsh," said Jasper.

"It doesn't," said the girl.

"I have tried to treat you as an hon-  
est friend should," said Jasper.

"Thank you again," said the girl.  
"I will admit that I hoped to see my  
verses in your paper."

"Try again," said Jasper.

The girl arose and put out her dainty  
hand.

"I am glad to know you, Mr. Dane,"  
she said. "I have a very dear friend  
who has sung your praises until I am  
quite jealous. I was really anxious to  
meet you. Good-bye." Then she swiftly  
added with a charming smile, "I am  
sure we shall meet again."

The smile and the words quite over-  
came Jasper.

"I—I hope so," he fairly stammered  
as he arose to his feet and watched her  
flutter from the room.

As he resumed his seat a card upon  
the floor drew his attention. The girl  
had dropped it. He picked it up, caught  
sight of his name and at once recog-

nized the angular handwriting. Then  
he read it aloud:

Dear Dane: This is my daughter  
Leonie, just come home from abroad.  
What she writes goes, of course. Yours,  
Linas Lamson.

Dane softly whistled.

So this was Lamson's little girl, this  
splendid young woman! How charm-  
ing she was, and how friendly. Had he  
hurt her feelings? What a brute he  
was! It would have been such a simple  
favor to publish the verses. And she  
never showed him her father's note.  
That was noble of her.

He picked up his pencil and bent over  
his work. And presently he softly  
hummed:

She came upon me unawares;  
I turned and she was there.

—Cleveland Plain Dealer.

## Milkweed.

Master Milkweed keeps a dairy

By the river side,

And above project his airy

Storerooms, arched and wide.

Here he stores his creamy cheeses,—

Soft and smooth as silk.

Thinks he'll find them when he pleases,—

But this magic milk

Some fine day will change to fairies

Who, on gauzy wing

Flying far, will start new dairies

For another spring.

—Sarah J. Day.

## Differences in Girls.

Laura D. Gill, dean of Barnard Col-  
lege for Women, makes out in her  
studies of girls three classes: First the  
natural home lovers and home makers.  
These no college education could spoil,  
for not all the wisdom of the sages could  
ever change them.

The extreme opposite of these are  
the girls who have absolutely no genius  
for home making; who cannot even ar-  
range the flowers properly; who, when  
they take home responsibilities on them-  
selves, always do everything wrong.  
This sort of girl, if she is not allowed to  
have a career outside the house, often  
blunders along trying to do her best at  
home making, and only succeeds in  
making everybody miserable. Many a  
home has been ruined by such a woman.  
If she has a capacity for a career it is  
better for the children and the men to  
let her follow it.

She is of the sort who must marry  
not for the love of a home, but for the  
love of an individual; and if she does  
marry for that, she is also of the sort  
to conquer all her disabilities as a home  
maker for the sake of the man she  
loves.

Most girls, however, belong to a  
third class. They are not particularly  
domestic, but they have latent powers  
for home making. This sort of girl  
should be kept in touch with the home  
life throughout her college career. Her  
vacations should be, when at home, do-  
ing home duties. If she skips a year in  
college and devotes it to home life it will  
be well for her. Her domestic faculties  
should be cultivated in all possible ways.  
The more she is brought into contact  
with children the better, provided it is  
under proper conditions. If she studies  
the kindergarten system it will be well,  
for this not only develops a love for chil-  
dren, but a knowledge of how to educate  
and manage them. A friend married a  
kindergartner. I always contended the  
education she had from it had helped  
her to be a splendid mother. Nature  
and inheritance had prepared her for  
this in advance, training had put on  
the finishing touches.—Phrenological  
Journal.

SHE had read a good deal, and prided  
herself on being pretty well up on the  
affairs of the day. All disputes," she  
said, "should be settled by arbitration."  
"Quite right," he replied. "Now, we  
had a little dispute this morning as to  
certain household—" "There isn't noth-  
ing to arbitrate in that," she interposed  
hastily. "I am right, of course." Then,  
after a moment, she added: "But it  
seems so foolish to have wars and  
strikes when it's so easy to arbitrate."  
—Chicago Post.



## DOMESTIC ECONOMY.

## Hints to Housekeepers.

Marks on the kitchen wall, which have been made by careless hands in striking matches, will disappear if rubbed with the cut surface of a lemon, then with a cloth dipped in whiting. Wash the surface with warm soap and water, and quickly wipe with a clean cloth wrung from clear water.

Use clean, soft rags to remove the grease from kettles and frying pans before washing. Wipe all the grease from the meat dishes with rags or paper. Clean grease spots from the stove with paper and save all to start the kitchen fire. Put your hand in a paper bag when you black the stove.

A delicious and simple candy is made from four cupfuls of brown sugar, one cupful of milk and the regulation piece of butter that resembles a walnut in size. After twenty minutes' cooking, add a tablespoonful of vanilla and the meats of one pound of English walnuts, and pour out on a buttered dish.

Although sweet potatoes form a staple article of diet all the year round, the manner of preparing them is usually limited to baking and boiling. It is in Southern homes that the visitor gets an opportunity to taste the many appetizing ways in which they may be prepared. One of the chief difficulties in boiling sweet potatoes is their tendency to have a watery appearance unless more care is taken to dry them off than is accorded to white potatoes. In baking, boiling, steaming or any other manner of preparing them, it is always better to have all the potatoes about the same size, as when they are uneven the small ones will become watery from overcooking, if the large ones receive sufficient boiling. An excellent way to prepare them is by steaming, as they will be dry and mealy when finished.

The simple matter of boiling a fish properly seems to be beyond the intelligence or the practice at least of the average cook, yet the difference between any way and the right way amounts to the difference between a palatable, appetizing dish and one which is flavorless, if not positively repugnant. To every two quarts of water allow a teaspoonful of salt and a tablespoonful of vinegar. Let the water be thoroughly warm, but not boiling, when the fish is carefully put in, unless a fish soup is contemplated, when it should be cold to extract the flavor. The water should be brought quickly to the boiling point, after receiving fish, and almost immediately drawn to the side of the range to simmer until done, an allowance of ten minutes to each pound being sufficient time after the simmering has begun.

The polishing of furniture seems to be of comparatively modern date. The effect is that a hard-faced surface is secured, which is not so liable to become scratched as varnished, and which presents equally as brilliant and fine appearance. There are several pastes and polishes used, a few of which are herewith given: A good furniture polish is made with half an ounce of beeswax and a quarter ounce alkanet root, which are melted together until the wax is well colored; then add half a gill each of raw linseed oil and spirits of turpentine; strain through muslin. A polishing paste is made as follows: Take three ounces of white wax, half an ounce of castile soap, one gill spirits of turpentine; shave the wax and soap very fine and put the wax in the turpentine; let the mixture stand twenty-four hours; then boil the soap in one gill of water and add to the wax and turpentine. This paste is highly recommended by practical men.

## Domestic Hints.

MACARONI CREAMED.—Break twelve sticks of macaroni into 1-inch lengths and boil in one quart salted water twenty minutes. Turn into a colander and drain. Make a cream of one tablespoon each of butter and flour rubbed smooth and added to one and a half cups of hot milk. When thickened, season and return macaroni to heat. A

little grated cheese may be added just before serving.

**SNOW PUDDING.**—Dissolve half a box of gelatine in one pint cold water; when soft add one pint boiling water, the juice and grated rind of two lemons, and two and one-half cups sugar. Let it stand until it is cold and begins to stiffen. Then whip in the well-beaten whites of five eggs. Pour into wet moulds and place on ice. Serve with soft sauce made of one pint milk, yolks of three eggs and half a cup sugar. Flavor with vanilla.

**POTATO GEMS.**—To one cupful of warm mashed potatoes add one tablespoonful of salt; beat the yolks of three eggs, add to them one cupful of milk; pour this upon one and one-half cupfuls of sifted flour and mashed potatoes; add the beaten whites of the eggs and two level teaspoonfuls of baking powder. Fill buttered gem pans two-thirds full, and bake in a quick oven twenty minutes or half an hour. Do not brown them too much.

**BOILED SWEET POTATOES.**—Scrub the potatoes clean with a vegetable brush and put them over rapidly boiling salted water. Cook until they can be pierced with a fork and are only slightly hard in the center, then drain off the water. Put the kettle on the back of the fire, cover the potatoes with a napkin, and over this put the cover of the saucepan to hold in the steam. Let the potatoes remain for fifteen minutes where the heat is sufficient to keep them steaming without burning, then serve.

**HAM MOUSSE.**—Soak a level tablespoon of granulated gelatine in a fourth of a cup of cold water and dissolve it in three-quarters of a cup of hot chicken liquor or white stock; strain over a cup of finely chopped boiled ham, and season to taste with salt and cayenne. Stand in a pan of cold water, stir until the mixture begins to set, then fold into it a cup of thick cream, beaten until stiff and dry. Turn into chilled baking powder cans and stand aside for several hours in a cold place to harden. Turn out, cut in slices, serve on lettuce leaves, put a spoonful of mayonnaise on each slice, and garnish in the center with an olive or a round of sliced pickle. Serve as a salad course with wafers or sandwiches.

**MOCK CODFISH BALLS.**—Six medium-sized potatoes washed, peeled and boiled for ten minutes in salted water. Drain and grate them while hot and stir in two heaping tablespoonfuls of butter; mix thoroughly. Season with salt, cayenne pepper to taste, and add a teaspoonful of grated onion and salt-spoonful of mace. Beat two egg yolks light, and stir well into it with two heaping tablespoonfuls of cracker crumbs. Fry brown in small balls in boiling fat without crowding them in the basket, drain on kitchen paper and serve very hot on a platter; garnish with parsley.

**FIG CREAM CANDY.**—Ingredients: Two medium-sized cups of granulated sugar, half a cupful of hot water, one teaspoonful of vanilla extract and half a cupful of chopped figs. Stir the sugar into the hot water, put it on the stove and watch until the mixture boils, then let it boil rapidly for three minutes. Remove from the fire, add the vanilla, and beat for several minutes, or until it is creamy. Rub the pieces of fig in powdered sugar, shaking off the surplus, and whip these into the cream. Form into balls and put on waxed or greased paper to cool. These will be less sticky to handle if rolled in powdered sugar before they have thoroughly hardened.

"Yes, it's mostly bill and coo during the honeymoon," growled Mr. Sourdrop, helping himself to the best piece of chicken, "but after that I've noticed that it is pretty nearly all bill."

Whereupon the young dry goods clerk was seen to look thoughtfully in the direction of the school teacher.—Baltimore American.

**STREET CAR CONDUCTOR:** "How old is that boy, madam?" Lady: "Why do you ask?" Conductor: "Because it's a fare question."—Chicago News.

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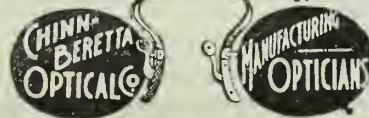
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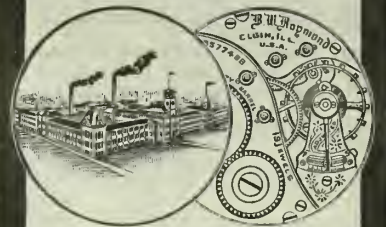
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60 Acres, Flathead Co., Mont. 10 acres timber. Fair buildings. Orchard. Farming implements, stock, etc., go with farm. 3 miles to R. R. \$3,300.

640 Acres, Cascade Co., Mont. Good buildings. Orchard. 2 fine streams on land. Land well fenced. 6 miles to R. R. \$7,500.

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## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, March 19, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday.....	75 1/2 @ 76 1/2	76 1/4 @ 77 1/4
Thursday.....	76 1/2 @ 75 1/2	77 @ 76
Friday.....	75 1/2 @ 74 1/2	76 1/2 @ 75 1/2
Saturday.....	74 1/2 @ 75 1/2	76 1/2 @ 75 1/2
Monday.....	76 @ 74 1/2	76 1/2 @ 75 1/2
Tuesday.....	74 1/2 @ 75 1/2	75 1/2 @ 75 1/2

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday.....	44 1/2 @ 45 1/2	35 1/2 @ 36
Thursday.....	45 1/2 @ 45 1/2	36 1/2 @ 35 1/2
Friday.....	46 @ 45 1/2	36 1/2 @ 35 1/2
Saturday.....	45 1/2 @ 45 1/2	36 @ 36 1/2
Monday.....	45 1/2 @ 44 1/2	36 1/2 @ 36
Tuesday.....	42 1/2 @ 44 1/2	35 1/2 @ 36 1/2

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 13 @ 1 12 1/2	1 09 1/2 @ 1 09
Friday.....	1 12 1/2 @ 1 12	1 09 @ —
Saturday.....	1 12 1/2 @ 1 12 1/2	1 09 1/2 @ 1 09 1/2
Monday.....	1 12 1/2 @ 1 11 1/2	1 09 1/2 @ 1 08 1/2
Tuesday.....	1 11 1/2 @ 1 11 1/2	1 09 1/2 @ 1 08 1/2
Wednesday.....	1 11 @ 1 10 1/2	1 08 1/2 @ 1 07 1/2

## WHEAT.

The outward movement continues slow, which is not unusual for the month of March, as will be seen by referring to the record of previous years. In the corresponding weeks for the past six years there are four consecutive years showing no wheat clearances from this port. Taking this for a comparison, the current week makes a very good showing in the way of wheat exports, as three straight cargoes of wheat and another of wheat and rye have been sent aloft from here for Europe since date of last review. If the export trade in this cereal proves light during the next few months, it will not be for lack of ocean tonnage, as there is a good sized fleet in port seeking engagement, the number of idle ships being much larger than for corresponding period for several years preceding. Ocean freights are lower than they have been for a long time. A recent charter was effected at 22 1/2 shillings per ton for the usual European voyage, giving the charterer the privilege of loading wheat and barley, for which service more is usually charged than for straight wheat cargoes, owing to barley being lighter and occupying more room to the ton. A year ago ocean freight rates on wheat ships were quotable at 37 1/2 shillings to Europe, and two years ago charters of wheat ships could not be effected under 40 shillings. The lower freight rates now prevailing are strengthening wheat values to some extent, but the improvement in prices for wheat has not been in keeping with the decline in freights.

California Milling.....	1 12 1/2 @ 1 15
Cal. No. 1 shipping, alongside.....	1 10 @ 1 12 1/2
Oregon Valley.....	1 10 @ 1 12 1/2
Washington Blue Stem.....	1 10 @ 1 15
Washington Club.....	1 07 1/2 @ 1 10
Off qualities wheat.....	1 15 @ 1 07 1/2

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	68 3/4 @ 68 3/4	68 3/4 @ 68 3/4
Freight rates.....	37 1/2 @ 38 1/2	22 1/2 @ 23 1/2
Local market.....	96 1/2 @ 98 1/2	1 10 @ 1 12 1/2

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.13 @ 1.10 1/2.
December, 1902, delivery, \$1.09 1/2 @ 1.07 1/2.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.08 1/2 @ 1.07 1/2; May, 1902, \$1.11 @ 1.10 1/2.

## FLOUR.

Wholesale handlers complain of trade not being as active as they would like to have it, or as immediate supplies and offerings would admit of. Prices are decidedly reasonable, in fact, are in many instances lower than justified by the present cost of wheat. Considerable flour is being sold at lower figures than it could be duplicated for by the same mills at this date without loss. Any changes in flour values in the near future are almost certain to be to stiffer figures.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65

Fancy brands, johhng.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

## BARLEY.

Considering the time of year, the shipping demand for this cereal is very good, and market is presenting a firm tone, current values being well maintained, both for brewing and feed descriptions. Several of the ships now loading for Europe, or preparing to load, have barley specified in their charter, and some shipments of wholesale proportions are likely to be made on the vessels in question if the barley can be obtained at or near prevailing figures. Business on local account is of very fair volume in feed descriptions. Prospects are there will not be much barley on hand at close of the season.

Feed, No. 1 to choice.....	92 1/2 @ 95
Feed, fair to good.....	90 @ 92 1/2
Brewing, No. 1 to choice.....	97 1/2 @ 100
Chevalier, No. 1 to choice.....	1 10 @ 1 17 1/2
Chevalier, poor to fair.....	92 1/2 @ 95

## OATS.

Market is not showing much activity, values being on too high a plane for buyers to take hold freely. There is no weakness exhibited, however, and none of consequence likely to be developed during the next two or three months. Stocks are not heavy, either here or at leading points of supply. Holdings are largely in second hands, and it is the rare exception where any disposition is shown to crowd offerings to sale at less than full current rates.

White Oats, fancy feed.....	1 40 @ 1 45
White, good to choice.....	1 35 @ 1 40
White, poor to fair.....	1 27 1/2 @ 1 32 1/2
Gray, common to choice.....	1 27 1/2 @ 1 35
Milling.....	1 37 1/2 @ 1 42 1/2
Surprise, good to choice.....	1 45 @ 1 50
Black Russian.....	1 15 @ 1 32 1/2
Red.....	1 22 1/2 @ 1 40

## CORN.

Present offerings are wholly domestic product and are not of heavy proportions. Prices remain at about same range as last quoted, with the firmness of the market more emphatic on desirable yellow than on white corn, the proportion of the first named variety in present offerings being light.

Large White, good to choice.....	1 35 @ 1 45
Large Yellow.....	1 35 @ 1 45
Small Yellow.....	1 45 @ 1 50

## RYE.

The ship Langdale, clearing the past week for Antwerp, took as part cargo 35,800 centals rye. There are no heavy quantities now offering. Market is firm at the quotations.

Good to choice.....	95 @ 97 1/2
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## BUCKWHEAT.

There are no evidences of any noteworthy trading in this cereal. Quotable values remain nominally as last stated.

Good to choice.....	1 55 @ 1 70
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## BEANS.

An easier feeling is reported in the market for white beans and also for Limas, due to quiet condition of the trade East, and to fair prospects for this early date for coming crop in this State. The shading is more at the top prices than on the inside figures, making the range of values narrower than ordinarily. Values for colored beans are being in the main well sustained at previously quoted range. Present stocks of colored are principally Pinks and Bayos, and there has been considerable trading in these varieties during the past few weeks.

Pea, fair to good, 100 lbs.....	3 50 @ 4 00
Small White, good to choice.....	3 00 @ 3 25
Lady Washington.....	2 75 @ 3 00
Pinks.....	1 95 @ 2 20
Bayos, good to choice.....	2 50 @ 2 70
Reds.....	2 50 @ 3 00
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	4 25 @ 4 40
Black-eye Beans.....	3 90 @ 4 10
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

## DRIED PEAS.

The market has developed no especially noteworthy features since last review. There are fairly liberal stocks of Green or Blue Peas, but they are being as a rule quite steadily held. Supplies of Niles Peas are of light proportions, but at same time are likely to prove sufficient for the requirements of the near future.

Green Peas, California.....	1 50 @ 2 00
Niles Peas.....	1 75 @ 1 80

## WOOL.

Spring shearing is now under full headway in the southern part of the State, and free arrivals are looked for here during the next few weeks. Not enough has yet arrived to enable quotations being named for new wools. In all probability, however, values for this year's Southern Spring clip will be very soon determined. Quotations here appended are wholly nominal at present, being based on values for 1901 wools.

## SPRING.

Southern, defective, 7 mos.....	7 @ 8
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	10 @ 12

## FALL.

Humboldt and Mendocino.....	11 @ 12
Northern Mountain, free.....	9 @ 10
Northern Mountain defective.....	8 @ 9
Middle Counties.....	8 @ 10
San Joaquin and Plains.....	6 1/2 @ 8 1/2
San Joaquin Lambs.....	7 1/2 @ 9

## HOPS.

The situation is practically the same as for several weeks past. Local dealers continue to quote 13 @ 17 1/2, but there is nothing to indicate that they are in the field as buyers at this range of prices. That business during the balance of the season will be largely of a light johhng character is altogether probable. A New York review of recent date summarizes the situation in that center as follows:

"Our local market has not changed to any extent during the past week. The light business passing has been at full rates and a firm, confident feeling pervades the trade. Holders are not trying to hurry matters, believing that stocks will work out in good shape before the season closes. The future of the market, however, depends very largely on the quantity of hops now in brewers' hands. Stocks held by dealers are moderate; the New York State crop has been pretty well marketed and supplies on the Pacific coast are light. If brewers require as many more hops as dealers are calculating on, there may be some further improvement in values. Bids that have been made on the open market this week indicate that considerable business could be done in fine hops, either State or Pacific coast, at 17c; that figure is 1/2 @ 1c below holders' views. The range in values is narrowing from the fact that the lower grades have been constantly hardening of late. Very few sales reported in the interior of this State, but we are advised that 17c has been bid and refused. Up to 15c has been paid on the Pacific coast for the best."

## HAY AND STRAW.

Arrivals of hay have been tolerably free during the week under review, and the market has inclined in favor of the buying interest, although in the matter of quotable rates there have been no radical changes effected. While prospects could not well be better at this date for an abundance of feed the coming summer, it is not considered probable that hay values this spring will touch materially lower levels than are now current, as most producers are realizing only small profits at existing prices.

Wheat, good to choice.....	9 50 @ 12 00
Wheat and Oat.....	9 50 @ 11 50
Tame Oat.....	8 50 @ 11 00
Wild Oat.....	8 00 @ 10 00
Barley and Oat.....	8 00 @ 10 00
Alfalfa.....	9 00 @ 11 00
Clover.....	7 00 @ 8 50
Compressed.....	9 00 @ 12 00
Straw, 1/2 bale.....	40 @ 60

## MILLSTUFFS.

Bran was in more than ample stock for immediate requirements and market showed weakness, although asking rates were without very radical change. Middlings and Shorts were not offered very freely, and prices in consequence ruled steady. Selling figures for Rolled Barley and Milled Corn remained about the same as preceding week.

Bran, 1/2 ton.....	14 00 @ 15 00
Middlings.....	17 00 @ 19 00
Shorts, Oregon.....	15 00 @ 16 00
Barley, Rolled.....	20 00 @ 21 00
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

## SEEDS.

Mustard Seed is in too light stock to admit of wholesale transactions, and is not at present quotable in a regular way. Flaxseed is arriving very sparingly, but there is no change to note in values. Alfalfa is being rather steadily held at the last quoted advance, with spot stocks light and in few hands. Business in Bird Seed is of small volume and at practically unchanged values.

	Per ctt.
Alfalfa, Cal.....	9 50 @ 10 00
Alfalfa, Utah.....	10 50 @ 11 00
Flax.....	2 40 @ 2 60
Mustard, Yellow.....	— @ —
Mustard, Trieste.....	— @ —

	Per lb.
Canary.....	3 1/2 @ 3 1/2
Rape.....	1 1/2 @ 2 1/2
Hemp.....	3 1/2 @ 3 1/2

## BAGS AND BAGGING.

As there are no more San Quentin hags obtainable until next Fall, they are virtually out of the field as a competitor this season. Calcuttas are without quotable change, but market is firm; wholesale operators are endeavoring to buy at 6c. Wool Sacks are moving to the interior in

moderate quantities, prices continuing practically as last quoted.

Calcutta Gra'n Bags, buyer June-July.....	6 1/2 @ 6 1/2
Calcutta Grain Bags, spot.....	6 1/2 @ —
San Francisco Grain Bags, 22x36, spot.....	6 @ 6 1/2
San Quentin Bags, 100.....	5 50 @ —
Wool Sacks, 4 lbs.....	32 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	8 1/2 @ —
Gunnies.....	— @ —
Bean Bags.....	5 1/2 @ 5 1/2
Fruit Sacks, cotton, three sizes.....	5 1/2 @ 6, 6 1/2
Fruit Sacks, Jute.....	7 @ 7 1/2

## HIDES, PELTS AND TALLOW.

Market for Wet Salted Hides is weak and tending downward, being relatively higher here than in the East. Current values for Dry Hides are being well maintained. Sheep Skins and Tallow are in fair request at quotably unchanged figures.

## HONEY.

The market is quiet and is not noteworthy for firmness, owing to the advanced date and the very fair prospects for coming season. The tendency of market in favor of buyers is most pronounced on Comb other than choice to select. There is not much extracted offering, and Comb honey of high grade is in light supply. The ship Benj. F. Packard, sailing this week for New York, took 200 cases extracted.

Extracted, White Liquid.....	5 @ —
Extracted, Light Amber.....	4 1/2 @ —
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	10 @ 12 1/2
Amber Comb.....	7 @ 10
Dark Comb.....	6 @ 7

## BEESWAX.

Values are ruling decidedly steady, with no surplus of offerings and not likely to be during the balance of the current season.

Good to choice, light, 1 lb.....	25 @ 25
Dark.....	24 @ 25

## LIVE STOCK AND MEATS.

The same firm tone last noted as existing in the market for Beef continues to be experienced. Demand is fair at current rates and promises to be more active at an early date. Mutton is bringing comparatively good prices, market ruling steady at the last quoted advance. Lamb continues scarce and high. Veal is arriving sparingly and choice brings good prices. Hogs sold to about as good advantage as preceding week, although the market was a little better supplied.

Beef, first quality, dressed, net 1/2 lb.....	7 @ 7 1/2
Beef, second quality.....	7 @ —
Beef, third quality.....	6 @ 6 1/2
Mutton—ewes, 8 @ 8 1/2; wethers.....	8 1/2 @ 9
Hogs, hard grain fed, 125 to 200 lbs.....	6 @ 6 1/2
Hogs, small, fat.....	6 @ 6 1/2
Hogs, large, hard, over 200 lbs.....	5 1/2 @ 5 1/2
Hogs, soft or acorn fed.....	5 @ —
Hogs, country dressed.....	6 1/2 @ 7
Veal, small, 1/2 lb.....	8 @ 9 1/2
Veal, large, 1/2 lb.....	8 @ 8 1/2
Lamb, spring, 1/2 lb.....	15 @ —

## POULTRY.

Arrivals were not particularly heavy of either home product or Eastern. The demand was not very brisk, however, and the market as a whole was less favorable to sellers than during preceding week. There was a quotable decline in values for Young Chickens of about 50c per doz. Old Chickens, unless extra large and fine, moved slowly at the previously quoted range. Extra large and fat chickens brought above quotations. Turkeys were in light request at fairly steady prices. Ducks and Geese in fine condition brought

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tolerably good figures. Young Pigeons met with a firm market.

Turkeys, dressed, choice.....	15	@	17
Turkeys, alive, Hens, 1/2 lb.....	15	@	16
Turkeys, alive, Gobblers, 1/2 lb.....	14	@	15
Hens, California, 1/2 dozen.....	4	50	@6 00
Roosters, old.....	4	25	@4 50
Roosters, young (full-grown).....	6	01	@7 00
Fryers.....	4	50	@5 50
Broilers, large.....	4	00	@4 50
Broilers, small to medium.....	3	00	@4 00
Ducks, old, 1/2 dozen.....	4	50	@5 50
Ducks, young, 1/2 dozen.....	7	00	@8 00
Geese, 1/2 pair.....	1	50	@1 75
Goslings, 1/2 pair.....	2	25	@2 50
Pigeons, old, 1/2 dozen.....	1	50	@—
Pigeons, young.....	2	75	@3 00

#### BUTTER.

Prices have been again marked down for fresh butter, and have not yet touched bottom, being still considerably higher than a year ago, or than ordinarily experienced at corresponding date. The entire absence of packed descriptions for some weeks past has aided materially in keeping prices for fresh at comparatively high levels.

Creamery, extras, 1/2 lb.....	24	@	25
Creamery, firsts.....	23	@	24
Creamery, seconds.....	22	@	23
Dairy, select.....	23	@	24
Dairy, firsts.....	22	@	23
Dairy, seconds.....	19	@	21
Mixed store.....	17	@	—
Creamery in tubs.....	—	@	—
Pickled Roll, 1/2 lb.....	—	@	—
Firkin, California, choice to select.....	—	@	—
Firkin, common to fair.....	—	@	—

#### CHEESE.

The market for domestic is inclining against sellers, with offerings on the increase and buyers not disposed to anticipate future needs. Eastern market is very firm. Imported is selling here at relatively lower figures than current at primary points, local stocks having been purchased some time ago, when values East were lower.

California, fancy flat, new.....	10	@	11
California, good to choice.....	9	@	10
California, fair to good.....	—	@	9
California, "Young Americas".....	9	@	11

#### EGGS.

Active buying in the interior on speculative account caused a speedy recovery from the lowest prices of preceding week of 1@2c. per dozen. At the higher figures the demand has been less active, but has been sufficient to prevent serious accumulations.

California, select, large, white and fresh.....	16	@	—
California, select, irregular color & size.....	14	@	15
California, good to choice store.....	14	@	15
California, common to fair store.....	—	@	—
Eastern, good to choice.....	—	@	—
Cold Storage.....	—	@	—

#### VEGETABLES.

In the line of fresh vegetables the tendency was in the main to easier figures than had been ruling, but it was still the exception where prices for choice to select were within reach of the average consumer. Asparagus was in increased supply and will likely soon be selling by the box. Rhubarb was in rather free receipt and is going by the box instead of by the pound. Prices for Tomatoes averaged lower than preceding week. Onions of select quality were not offering freely and brought slightly stiffer figures than had been ruling.

Asparagus, 1/2 lb.....	6	@	15
Beans, String, 1/2 lb.....	—	@	—
Beans, Wax, 1/2 lb.....	—	@	—
Cabbage, choice garden, 100 lbs...	50	@	—
Cauliflower, 1/2 dozen.....	—	@	—
Cucumbers, Bay, 1/2 large box.....	—	@	—
Egg Plant, Los Angeles, 1/2 lb.....	—	@	—
Garlic, 1/2 lb.....	2	@	2 1/2
Mushrooms, 1/2 lb.....	—	@	—
Onions, Yellow Danver, 1/2 cental.....	2 00	@	2 40
Peas, Sweet garden, 1/2 lb.....	4	@	6
Peppers, Green, Los Angeles, 1/2 lb.....	10	@	25
Peppers, Bell, 1/2 box.....	—	@	—
Rhubarb, 1/2 box.....	1 00	@	2 00
Squash, Marrowfat, 1/2 ton.....	10 00	@	15 00
Summer Squash, 1/2 box.....	1 50	@	1 75
Tomatoes, Los Angeles, 1/2 box.....	1 00	@	1 50

#### POTATOES.

The market for potatoes continued firm for choice to select table stock, and is not likely to rule much easier until new crop puts in an appearance in sufficient quantity to be quotable in a wholesale way. There are no large amounts of potatoes now arriving, and many of the lots coming forward are under choice. A few new potatoes have been received, but it will be sixty days or more before new will be sufficiently plentiful to satisfy all demands. Present inquiry for seed potatoes is mainly for Early Rose, and offerings of same are commanding good prices. Sweet potatoes were in moderate receipt and not in very active request.

Burbanks, Salinas, 100 lbs.....	—@—
River Burbanks in sacks, 1/2 cental.....	1 25 @ 1 40
Petaluma and Tomales Burbanks.....	1 40 @ 1 50
Oregon Burbanks.....	1 35 @ 1 75
River Reds .....	1 40 @ 1 50
New Potatoes, 1/2 lb.....	3 1/2 @ 5
Sweets, Merced, 1/2 cental.....	1 50 @ 1 60

#### The Fruit Market.

##### FRESH FRUITS.

Apples now on market are principally such as have been held in cold storage. Choice to select are being very steadily held, the quotable range of values being without appreciable change, but demand at the extreme figures generally asked is not active. Strawberries have not yet put in an appearance in quotable quantity, but are looked for at an early day.

Apples, fancy, 1/2 4-tier box.....	1	75	@	2	25
Apples, good to choice, 1/2 50-lb. box.....	1	00	@	1	50
Apples common to fair, 1/2 50-lb. box.....	50	@	75		

##### DRIED FRUITS.

Trade the past week in evaporated and dried fruits has not been of heavy volume and has been mostly of a jobbing character. Stocks of most descriptions are light and are principally in second hands, leaving very little opportunity for wholesale trading. The general tone continues fully as healthy as previously noted, it being the exception where any uneasiness is displayed or disposition shown to grant noteworthy concessions to buyers to effect sales. Holders are generally contending for full current figures, and in some instances, notably on apples, apricots and peaches of choice to select quality, higher prices than are warranted at quotations would likely have to be paid to effect free purchases. It is doubtful if there are over a dozen carloads of evaporated apples on the entire coast. Apricots are in about as light supply as apples. Of peaches there are probably not to exceed seventy-five carloads all told remaining unplaced. Pears cut a very small figure in present offerings. Stocks of pitted prunes are of too moderate volume to afford any cause for dealers to worry about securing speedy custom. Prospects are that with a moderate spring trade there will be a clean-up within the season of everything except old prunes. Old prunes may fare better than present conditions indicate, this description now being at the tail end of the procession as regards present values and immediate outlook. Old prunes offering are principally small sizes; 120's and smaller are offering at 1 1/2@2c. New prunes are offered very sparingly, with market for same firm on the basis of 3 1/2@3 3/4c. for the four sizes. No fears are entertained regarding an outlet for remaining stocks of new or 1901 prunes; all are expected to be called for before another season opens.

##### EVAPORATED OR BLEACHED.

Apricots, Royal, choice, in sacks, 1/2 lb.....	9	@	10
Apricots, Moorpark.....	10	@	12
Apples, in 50-lb boxes, rings, pressed, fancy.....	8 1/2	@	8 1/2
Apples, 50-lb boxes, rings, pressed, good to choice.....	7	@	8
Nectarines, 1/2 lb.....	5 1/2	@	6 1/2
Peaches, unpeeled, fancy.....	8	@	9
Peaches, unpeeled, choice.....	6 1/2	@	7 1/2
Peaches, peeled, in boxes.....	12	@	14
Pears, halves, choice to fancy.....	7	@	10
Plums, Red and Black, pitted.....	5 1/2	@	6 1/2
Plums, White and Yellow.....	5 1/2	@	6 1/2
Prunes, 4 sizes, in bags, 3 1/4@3 3/4c; 50-60s, 4 1/4@4 3/4c; 60-70s, 4@4 1/4c; 70-80s, 3 1/2@3 3/4c; 80-90s, 3@3 1/2c; 90-100s, 3c@—; these figures for 1901 crop.			

##### COMMON SUN-DRIED.

Apples, sliced.....	4	@	5
Apples, quartered.....	5 1/2	@	5 1/2
Peaches, unpeeled.....	6	@	6 1/2
Pears, prime halves.....	5	@	5 1/2
Plums, unpitted, 1/2 lb.....	1 1/2	@	2 1/2

##### RAISINS.

Not much doing in raisins and seldom is in March. Most distributors are still fairly supplied through purchases made before the last quoted advance went into effect, and are slow to take hold at the new figures. It is altogether probable, however, that remaining stocks, which are of moderate volume, will all be required during the current spring and coming summer. Present offerings are mainly loose Muscatels of lower and medium grades, supplies of all other kinds now offering in a wholesale or jobbing way being too light to be worthy of special mention.

Following are the prices for 1901 crop in carload lots:	
Loose Muscatels—	Per lb.
4-crown.....	6 1/2
3-crown.....	6
2-crown.....	5 1/2
Seedless Muscatels.....	5 1/2
Seedless Sultanas.....	5 1/2
Thompson's Seedless.....	6 1/2
Seeded—	
3-crown, 1-lb. carton.....	7 1/2 @ 8
2-crown, 1-lb. carton.....	6 1/2 @ 6 1/2
London Layers, 20-lb. boxes—	
2-crown.....	—
3-crown.....	—

##### CITRUS FRUITS.

Orange market was more liberally supplied than for a week or two preceding, with large size Navels in the majority, and in consequence this description ruled less in favor of seller than did the small and medium sizes. Present offerings are composed almost wholly of Navels. Lemon market was quotably unchanged, being fairly firm for best, but dull and

weak for common stock. Market for Limes was slightly easier.

Oranges—Navels, 1/2 box.....	1	25	@	2	75
St. Michael.....	1	25	@	2	00
Tangerine, half box.....	1	25	@	1	75
Seedlings, 1/2 box.....	1	25	@	1	75
Lemons—California, select, 1/2 box.....	2	25	@	2	75
California, good to choice.....	1	50	@	2	00
California, common to fair.....	75	@	1	25	
Grape Fruit, 1/2 box.....	1	25	@	2	50
Limes—Mexican, 1/2 box.....	6	00	@	6	50

##### NUTS.

Stocks of desirable qualities of Almonds and Walnuts bid fair to be soon cleaned up. Current values are being well maintained. The Peanut market is quiet, but steady.

California Almonds, shelled.....	15	@	18
California Almonds, paper shell, 1/2 lb.....	10	@	13
California Almonds, soft shell.....	8	@	10
California Almonds, hard shell.....	5	@	6
Cal. White Walnuts, No. 1 soft shell.....	10	@	11
Cal. White Walnuts, No. 2 soft shell.....	8	@	9
Cal. White Walnuts, No. 1 hard shell.....	9	@	10
Cal. White Walnuts, No. 2 hard shell.....	7	@	8
Peanuts, California, fair to prime.....	4 1/2	@	5 1/2
Peanuts, Eastern, hand-picked.....	5 1/2	@	6
Pine Nuts.....	5	@	6

##### WINE.

Market continues quiet, and in the matter of quotable values is practically the same as last noted, the range on dry wines of last year's vintage being 22@26c per gallon wholesale, although extreme figure above noted is more in keeping with the views of sellers than with the bids of large operators. Shipments of wine from San Francisco by sea in February, Hawaiian Islands not included, aggregated 295,725 gallons and 335 cases, valued at \$102,450. In February of last year the shipments by sea footed up 311,050 gallons and 325 cases, value \$98,715. In February, 1900, sea shipments were 572,490 gallons and 805 cases, including 15,750 gallons and 225 cases to the Hawaiian Islands.

##### Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1901.	Same time last year.
Flour, 1/2 sacks.....	119,420	5,020,157	4,703,079
Wheat, centals.....	218,577	7,755,606	6,143,844
Barley, centals.....	93,095	5,241,997	3,148,577
Oats, centals.....	5,455	725,305	550,596
Corn, centals.....	3,220	86,111	86,779
Rye, centals.....	40,450	2,9,191	104,522
Beans, sacks.....	12,901	613,212	524,642
Potatoes, sacks.....	30,555	1,069,856	1,246,414
Onions, sacks.....	3,165	168,923	146,882
Hay, tons.....	3,460	109,331	124,495
Wool, bales.....	308	44,263	24,657
Hops, bales.....	82	8,545	7,238

##### EXPORTS BY SEA.

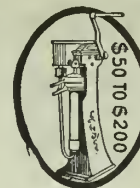
FOR THE WEEK.		Since July 1, 1901.	Same time last year.
Flour, 1/2 sacks.....	78,116	3,652,898	2,705,094
Wheat, centals.....	197,247	7,248,698	5,851,825
Barley, centals.....	761	3,766,518	1,843,787
Oats, centals.....	297	2,407	47,821
Corn, centals.....	297	9,265	2,651
Beans, sacks.....	207	20,436	11,438
Hay, bales.....	994	12,838	82,894
Wool, pounds.....	—	545,331	409,631
Hops, pounds.....	580	471,542	532,388
Honey, cases.....	20	5,762	1,695
Potatoes, pack's.....	1,265	43,938	110,044

##### New Patents.

DEWEY, STRONG & Co.'s SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

##### FOR WEEK ENDING MARCH 4, 1902.

694,516.—CAMERA—Akers & Richards, Ione, Or.	
691,452.—WOOD PIPE MACHINE—A. Anderson, Burnett, Cal.	
694,906.—IRONING MACHINE—C. W. Anderson, Los Angeles, Cal.	
601,346.—COACH SUSPENDER—W. N. Bert, Los Angeles, Cal.	
694,458.—CAPPING MACHINE—L. J. Borle, S. F.	
694,348.—TREATING METALS—G. C. Carson, Redding, Cal.	
694,528.—VOTING MACHINE—H. B. Cary, Los Angeles, Cal.	
691,460.—STOVE DAMPER—B. J. Casterline, Olalla, Or.	
691,620.—STREET SWEEPER—W. C. Dingle, Los Angeles, Cal.	
694,380.—IRONING TABLE—E. Fisk, No. Yakima, Wash.	
694,632.—SEWING MACHINE GAGE—G. Goreson, Los Angeles, Cal.	
694,740.—TREE TRANSPLANTER—G. G. Guenther, Los Angeles, Cal.	
694,741.—RAILWAY SWITCH—G. G. Guenther, Los Angeles, Cal.	
694,742.—RAILWAY SWITCH—G. G. Guenther, Los Angeles, Cal.	
694,476.—TRACTION ENGINE—B. Holt, Stockton, Cal.	
694,548.—CANE LOADER—A. Horner, Paaulo, Hawaii, H. T.	
694,865.—TREE STAND—C. Kachold, Portland, Or.	
694,554.—DOOR MAT—C. Kuhn, Fruitvale, Cal.	
691,555.—SAW HANDLE—E. L. Laherty, Verdi, Nev.	
694,662.—DARNING LAST—A. E. Macdonald, S. F.	
694,591.—KITCHEN IMPLEMENT—H. C. Needham, Los Angeles, Cal.	
694,420.—ROTARY HARROW—M. Schichtl, No. Yakima, Wash.	
991,804.—MICROMETER GAGE—J. Stromberg, Phoenix, Ariz.	
694,507.—SAUCEPAN—R. B. Vanderberg, Los Angeles, Cal.	
694,509.—GAME—G. W. Winckfield, Oakland, Cal.	
694,514.—SCREW JOINT—F. Wulff, Colusa, Cal.	



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## POULTRY YARD.

### Methods of a San Joaquin Grower.

A Farmington, San Joaquin county, poultry grower gives the Stockton News an outline of experience which is interesting:

**GOOD CARE OF THE BREEDERS.**—Early last spring, on looking over the breeders which we had decided to keep, we found that there were but four pullets which we thought were up to our standard. These four were the only ones which would do to mate with a certain excellent cock, and we decided that we would set no eggs unless they came from these pullets. These pullets were housed in a small coop, about 8x7, floor size. This coop had a dropping board and we kept it clean. There was a large window on the south front of it through which we placed water, grit, etc., and also made our entrance. On sunny days we opened this window and covered it with netting to admit the warm rays of the heat and allow a good circulation of fresh air. These fowls were fed whole wheat, oats and corn, and no mash or condiments whatever, and each one of the pullets laid in one thirty-one-day month twenty-nine eggs.

The rest of our flock was confined in a yard during pleasant weather, and the cream of the bunch held full sway over the ranch and orchard. From the eggs of these five pullets we hatched 109 chicks. We fed them wheat and cracked corn. The mother of these chicks we confined until they were eight weeks old, and after that, in the morning, when the dew was off the grass, we let them go bug hunting, and you bet your last summer's hat that they enjoyed it immensely. They grew and grew until we could hardly believe our eyes. Those yellow legs and rose combs and partridge colored plumages were worth a long day's journey to see. We could have raised more, but we quit hatching when others up here just began. But we believe that more is made and time is saved if one hatches chicks early and takes care of them. The eggs we did not use we sold for hatching at excellent prices. Late hatched chicks always begin to dry up when hot, dry winds commence. The feet become dry, they mope around and drink a great deal, and finally die.

The sex of the offspring of the pen of last season's breeders came about equally divided, being slightly in favor of the females.

**COOPS.**—The coops for the chicks, when weaned, are practically the same as those for hens and chicks. False bottoms are placed in them when we wean the chicks, for they prevent sweating and heating, and, in the end, roup and severe colds. We make these of lath and place each lath in the false bottom about 1/2 inch apart and the bottom 4 inches up from the real floor. Thus the droppings jostle down between the lath and fall on the floor proper and do not remain on the boards to

come in contact with and soil the feathers. If droppings accumulate on a parti-colored bird's plumage when young they will bleach the color out, as they contain ammonia and various other chemicals.

We have made our share of blunders, mistakes and failures while working with poultry, but as experience generally put one on the right track we believe we are almost there. Lice hunt the high places when I get out my can of "dust," and they see it coming quite often, too. Fresh water and grit are always before the chicks and old fowls.

**ESSENTIALS TO SUCCESS.**—It is not the number of dollars you invest that makes the success, but the knack of getting down to bedrock and working with sound judgment, which we will acquire with experience. Do not be discouraged if you fail a few times or take quack advice of honest meaning neighbors, but just keep a stiff upper lip and success will soon come your way with the geese hanging high.

When we look at these fifty fine pullets, some singing at this writing, we believe we will breed them always. It is truly gratifying to one who has worked patiently for the welfare of his flock to see the handsome pullets and cockerels mature and round out into splendid specimens of nature's own.

The matings for color (and, we believe, for shape) turned out exceedingly well last year, and there are many calls for young stock. We could have sold all our partridge Wyandottes early in the season, and we believe that the continuance of this last year's prosperity will show itself this fall. The great West is the coming poultry center of the United States. Long may the hen crank and the object of his crankiness be blessed. Mrs. Western Biddy has more than paid for the care that has been bestowed upon her, and if we had our way we would have her name placed on the roll of honor in the Hall of Fame.

### Beware of Ointments for Catarrh That Contain Mercury.

As mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is tenfold to the good you can possibly derive from them. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally, and made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free.

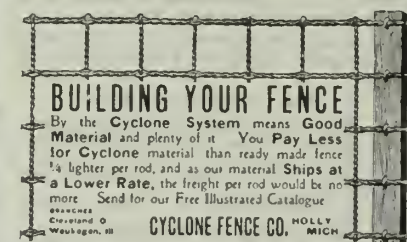
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PAGE

W. C. T. U.

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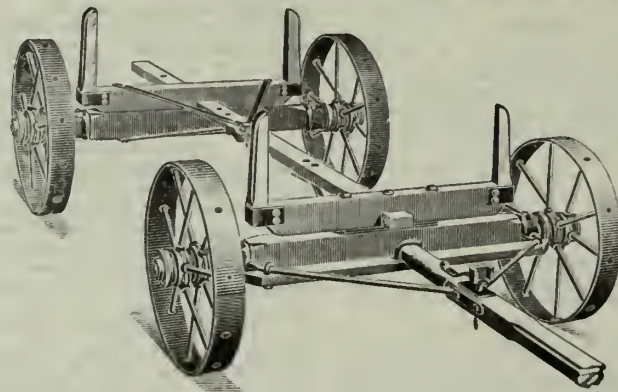
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### THE IRRIGATOR.

Irrigation and Stock Raising in San Joaquin County.

From a paper by A. T. COVELL at the Lodi Farmers' Institute.

San Joaquin is comparatively one of the level counties of the State. Aside from a small district in the southwest corner and another in the northeast corner, the entire county is beautifully spread out. There is a large proportion of friable and loamy soil, free from rocks and stone, or even gravel, susceptible of easy and thorough cultivation with a minimum outlay.

This county has always, since the settlement of the State by the American people, stood in the front rank as a grain-producing county. More recently there has been a greater tendency toward the cultivation of fruit trees and grape vines, nearly all of the better varieties, and still there is ample room to continue on those lines.

There is at present a strong tendency toward irrigation for both vines and fruit trees, which, when accomplished, adds much to the value of the land by reason of the increased profits derived therefrom. Much of San Joaquin county is very favorably situated for irrigation.

There is, in the northern portion of the county, the Mokelumne river, which furnishes a fine flow of water until late in the summer. From this stream the Woodbridge Canal Co. have a canal at Woodbridge with the necessary works at the river for diverting the water from the river. This canal is intended to cover all of the upland west of the canal and river from Stockton to New Hope. Then, again, there is the Stanislaus river on the south line of the county. From this stream water has been diverted by the Stanislaus Canal Co. at a point some distance above Knight's Ferry. This canal opens a very large district which can be readily irrigated, and it should develop into a beautiful and productive country. The opening up of these two large districts is not all by a long way.

**PUMPING.**—Underlying much of this beautiful valley, the underflow of water wending its way from the rivers and lesser streams and the mountains toward the low lands bordering the tidal portions of the rivers is of vast proportions, and is not to be lost sight of in this connection, or in dealing with irrigation as a source from which great benefits are to be derived. With the appliances now at hand and being manufactured, this great body of underflow of water can be raised to the surface about as cheaply as the cost of purchasing from the canal companies, especially so where ditches have to be excavated to any considerable length. In many cases it is impossible to secure the right of way for such ditches across intervening land.

Then, again, there is a great amount of territory that lies above near-by canals, especially so in the case of the Woodbridge canal. There is a very large district of fine country well adapted to the production of fine and heavy crops of grapes of the various

varieties, and also both deciduous and citrus fruits, olives, etc., when and where the land can be thoroughly irrigated. The pumping of the water from the lower strata will tend to open the pores and give a better flow to the points from which the water is drawn by the pumps.

The manufacturing of this class of machinery has become very extensive at the present time, and the cost of pumping water for irrigation is each year becoming cheaper, and new devices are still to follow, which will still lower the cost of securing the supply of water required.

**STOCK RAISING.**—There is quite an extent of country which has for many years been devoted to grain culture, the raising of which in many cases not yielding a satisfactory revenue. The diversion of the water from its original channels out and through these cultivated fields has opened the way for adding greatly to the value of the land for stock raising on a large and profitable scale.

**ALFALFA.**—By the use of the water these lands can be made to produce large quantities of alfalfa, which is one of the greatest of forage plants, if not the greatest, in the State, considering the cost of securing its best and final results, as a stock product, which we will say is the animal ready for the market, the animal harvesting the crop until it is ready for the purchaser of fine beef cattle, for which purpose there is no doubt of its great value.

Again, the cows can be milked and the dairy business successfully carried on and still raise the calves to grow the beef and still more milk cows, thus gaining the best results in both dairying and beef growing from the same fields. By pursuing this course, such lands can be made to produce a fine revenue by those who wish to operate on those lines. Many people who have not actually seen with their own eyes the numbers of cattle that can be raised on a limited acreage of good land would be surprised as to the grand results that can be secured if properly attended to. By combining the two industries a great saving can be made.

Fine, fat and luscious beef can be produced upon alfalfa fields, ready for the best of the markets, without stall feeding. By this mode of procedure, when once under way, the young cows are each year coming of age to take the place of the older ones which can be fattened for beef, and each branch of the industry can continue year after year regularly.

Upon good land, well irrigated, four and five heavy crops of hay can be cut per annum, ranging from one to two tons per cutting, quality of land and conditions having much to do as to these results. The county has plenty of land that should give best results.

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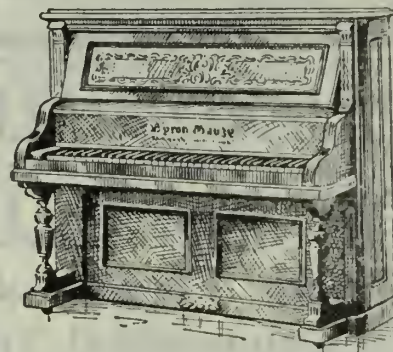
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## IMPERIAL AND GULF R. R.

The Imperial and Gulf Railroad Company has been incorporated to build a standard gauge railroad from Old Beach Station on the S. P. R. R. to Imperial, with a future extension to Calexico and the Gulf of California, and with branch lines to Blue Lake and Eastside. Board of Directors consists of W. F. Holt, President First National Bank of Imperial, and J. H. Braly, President of the Southern California Savings Bank; F. C. Paulin, A. H. Heber and E. A. Meserve, all of Los Angeles. Sufficient cash has been paid into the treasury to grade and bridge the road to Imperial, and this work will be pushed to completion at once. New York capitalists are negotiating for the bonds, which will be issued to complete the road and furnish the rolling stock.

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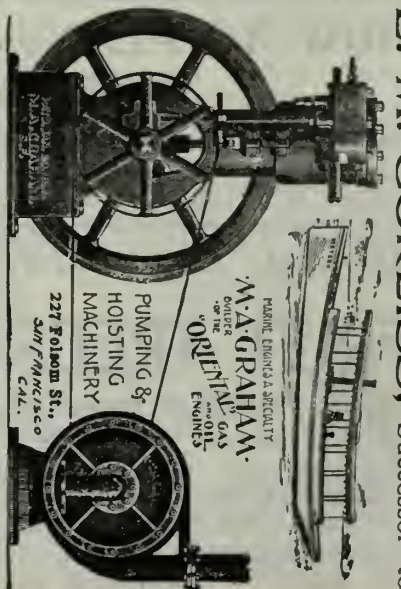
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## Patrons of Husbandry.

### Tulare Grange.

To THE EDITOR:—Tulare Grange met at its hall on the 15th. There was a good attendance and much interest manifested in the proceedings.

The Farmers' Institute committee reported progress. Posters have been put up and invitations sent out to all well-known farmers.

Rooms have been hired under the Institute Hall, with tables, chairs and all accommodations, where farmers' families can meet and have their lunches, the Grange furnishing tea, coffee and sugar. Careful women have also been engaged to attend on visitors, prepare the tea and coffee and take charge of and look after the children while the parents attend the lectures. The Institute will be held in Goldman's Hall, March 21 and 22.

The National Grange subject for March was discussed, nearly every member taking part in it.

The question box was opened and the following questions drawn from it:

- 1.—Should our orchards be irrigated in winter?
- 2.—How should our orchards be cultivated and what style of plows should be used—the mold and share or disk plow?
- 3.—To what extent does smudging prevent injury by frost in our orchards?

The discussion of these subjects was very generally participated in by all the members. No definite conclusions were arrived at, as the subjects are still in the experimental stage.

The Lecturer announced the Grange subject for next meeting, "What Constitutes a Good Education?" and appointed Sisters Morris and Fleming and Brothers Jacob and Holcom to read papers on it. J. T.

### Stream Measurements.

The report of progress of stream measurements for the calendar year 1899, by F. H. Newell, with the two accompanying papers noted below, has been issued as Part IV of the Twenty-first Annual report of the United States Geological Survey. The whole makes a volume of 768 pages, illustrated by 156 plates and 329 figures, including views of rivers and the methods of measuring them, with maps and diagrams of river flow. In the report of progress, tables of maximum, minimum, and mean discharge of streams in various parts of the United States are given and other data of use to engineers and investors, as well as to the public in general.

Following the report of progress of stream measurements is a paper by N. H. Darton, giving a preliminary description of the geology and resources of the southern half of the Black Hills and adjoining regions in South Dakota and Wyoming.

The volume closes with a paper by Willard D. Johnson on "High Plains and Their Utilization," giving a description of the structure of the Great Plains region of western Kansas and adjacent States, and discussing the occurrence of water underground. Applications for this volume should be made to the Members of Congress or to the Director U. S. Geological Survey, Washington, D. C.

Coughs & Colds Cured with R. Hall's Pulmonary Balsam.

### NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION, a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 309 California Street, San Francisco, at 10 o'clock A. M., Wednesday, the 9th day of April, 1902. I. C. STEELE, President. CHARLES WOOD, Secretary.

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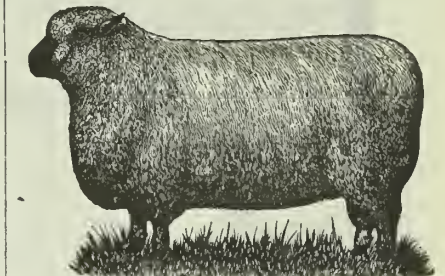
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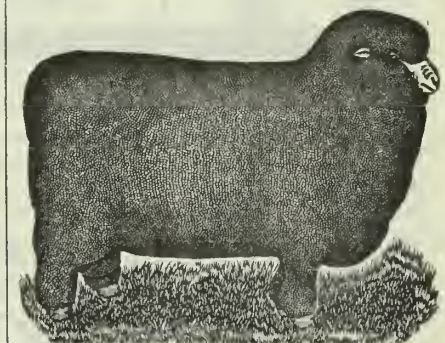


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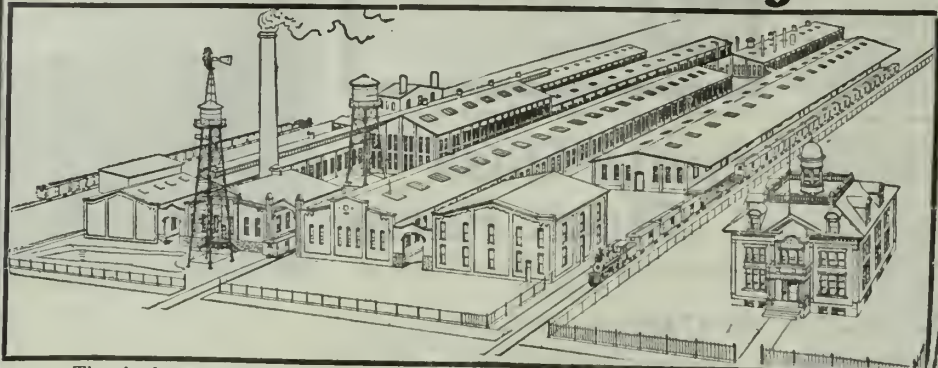


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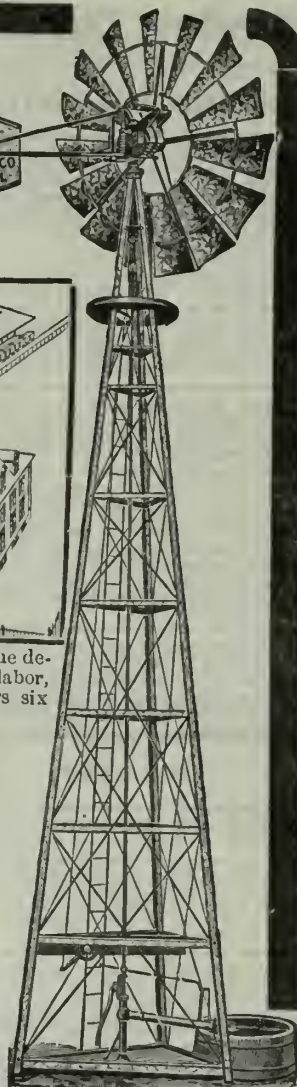
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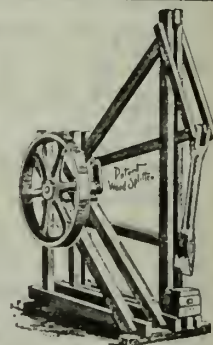
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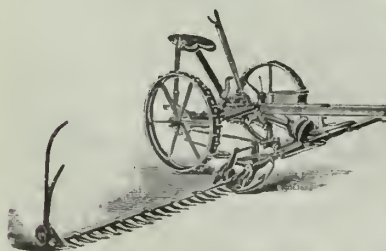
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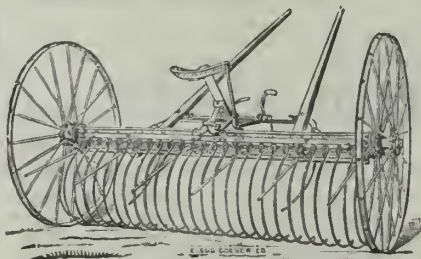
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## AND CALIFORNIA FRUIT BULLETIN.

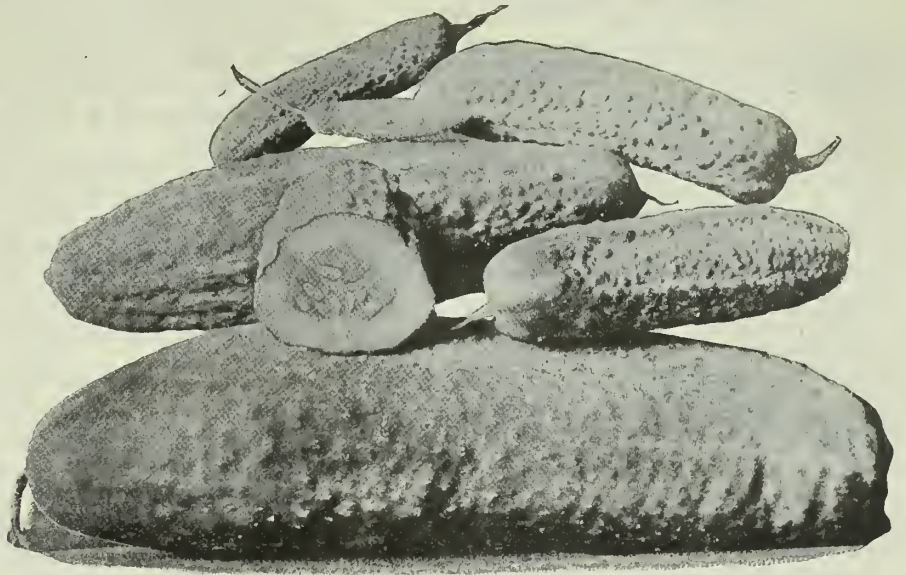
Vol. LXIII. No. 13.

SAN FRANCISCO, SATURDAY, MARCH 29, 1902.

THIRTY-FIRST YEAR.  
Office, 830 Market St.

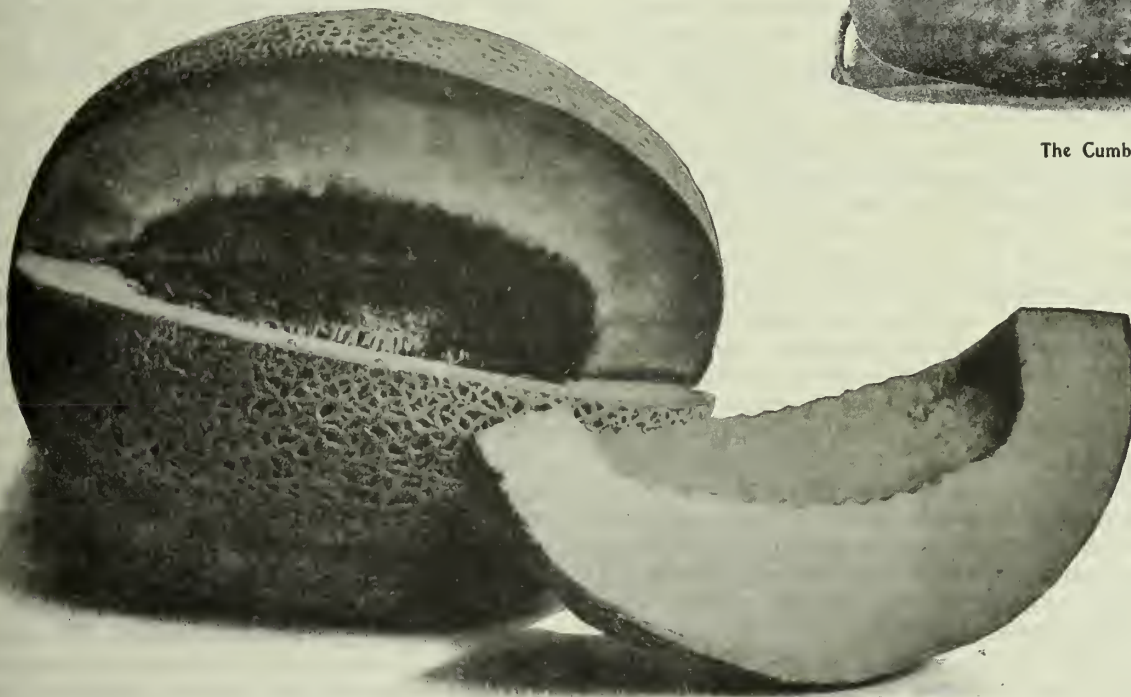
### For the Summer Garden.

Though we have urgently appealed to our readers to make wider use of winter gardening which the climate of California favors, and thus supply themselves with the delicious esculents which are hardy enough to survive all frosts likely to be encountered upon our warmer mesas and hillsides, there are of course other classes of plants which can only be grown during the frost free period. Suggestive of these are the three attractive vegetables which appear on this page, and which we have drawn from the horticultural picture gallery of the Cox Seed Company of San Francisco, with the idea of promoting the home growth of vegetables upon our ranches and fruit farms. The human mind has a natural bent toward growing things which was imparted, we presume, in the Garden of Eden, and sometimes it needs only the suggestiveness of a picture to lead a man or woman to get seeds and plant them. At the same time, the pictures have interesting stories connected with them which are of local moment. The highest on the page is the cucumber which is



The Cumberland Cucumber—A New Pickling Variety.

large early variety extensively grown in Alameda county for the San Francisco market. California is not a great corn country, and contributes but little to the canned corn supplies of the country; but there is still every reason why more should be done in growing sweet corn for home use. Even near the coast, where the grain does not mature well, green corn comes to good condition and the frost free period is so long that corn can be plucked fresh for many weeks by using early and late varieties and planting in succession. It is true that the ear worm is persistent and disgusting, and there are other drawbacks, but hold to the corn patch for all that—there is nothing that quite fills its place at the table, and some day we hope a practicable escape from the moth may be hit upon. Only three summer vegetables have been suggested, but let these call in the rest—beans of all kinds, egg plants, tomatoes, watermelons, etc., are all to be found discussed in our seedsmen's catalogues, and one has only to open the pages to be warmed with a flush of garden fever.



California Large Nutmeg Muskmelon Being Restored to Its Old Excellence.

now attracting wide attention east of the Rocky mountains as a pickling cucumber, and its name may be condensed in this unique form, "Cu-cumber-land," in which the middle division serves both as the last two syllables of the first word and the first two of the second—the whole serving well as a tribute to California, for none is superior as a cucumber land. As the picture shows, the form is straight and slim—elegant for pickles and hardly less so for slicing. This variety promises to be widely popular.

The next picture represents Cox's California Large nutmeg muskmelon. It will be recognized by old timers as a variety most highly esteemed. When it came down from the Sacramento river as Runyon's melon it was glorious in its size and it carried the finest interior appearance and flavor also. Unfortunately, it was allowed to deteriorate in quality, and now Mr. Cox is bringing it back to the old standard by rigid isolation and selection. We need this old variety in its old quality—it has a place of its own in the melon list which is not interfered with by the newer favorites, no matter how good they may be.

The third picture shows another mid-summer favorite—sweet corn. The variety is the Mammoth Sugar—a vigorous,



Mammoth Sweet Corn—An Early Variety Popular in Alameda County.



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DEWEY PUBLISHING CO. Publishers

E. J. WICKSON. Horticultural Editor

San Francisco, March 29, 1902.

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## The Week.

Again there has been rain in all parts of the State, and though frosts have occurred here and there, they were usually too light to work injury. This is a fortunate outcome of the danger which was involved in the exceedingly heavy March weather which prevailed on the other side of the mountains. We have had it rather cool for comfort and for rapid growth, but have escaped low temperatures, which would have occasioned great losses. For these reasons the week has pushed a good outlook nearer to the realization.

Wheat futures have sagged during the week, but have come up to grade again, and, in fact, the more remote deliveries are higher than a week ago. Spot wheat is firm and unchanged. Freights are still low; 22s has been taken for a large ship and 22s 6d is quotable for wheat and barley cargoes. Four straight cargoes of wheat have gone out—11,000 tons, worth a quarter of a million dollars. Barley and flour shipments are light this week. Barley prices are firm, especially for feed barley, which is close to shipping barley values. Other grains are unchanged, except that rye has quieted down a little from its recent flight. Beans are quite unsettled; holders are stiff in their figures, but it is hard for outside bean sellers to reach them. Red Kidneys and Black Eyes are scarce, while whites, Limas and common red beans are uncertain or lower. Less receipts of bran have led to stiffer holding and an advance of about \$1 per ton. Ground corn is easier. Hay is weak and lower for all stable grades, while cow hay holds well. Beef and mutton are firm, but lamb is slightly lower. Hogs are higher for small and medium or any stock desirable to packers. Butter is still lower and cheese is easy at old prices. Eggs are steady and in active demand for storage at inside figures. Country buying is still sharp. There is good demand for poultry of all kinds; prices are up in the East and receipts from that direction are less. Choice potatoes are firm and unchanged, but poor are hard to sell. Onions are weaker, as receipts from beyond State lines are large. Vegetables generally are in large supply and lower. Rhubarb shipments from the East have begun briskly. Oranges are slow at unchanged prices; the weather has been too cold for active fruit trade. Supplies of choice lemons are light and prices are firm, but there is plenty of cheap stock. Limes are lower. Little is doing in dried fruits; Eastern demand is cautious. Honey is easier,

but supplies are not large. Hops are as before. Small lots of spring clip wool have come in and sell quickly. Opening prices are slightly better than last year.

And now East India wants American agricultural machinery. The Department of Agriculture reports a demand from Bengal for American reapers, corn binders, plows and other agricultural implements, together with the cost of transportation to that country. They want also "a plowing machine worked with wheels, of simple construction and moderate price, which will turn up land 2½ or 3 inches deep and can be operated by one man or steam power." The ideas of the writer seem a little hazy, but if they want steam plows to turn shallow furrows and an almost unlimited acreage of them, they can hardly do better than get some of the outfits which are now being used in this State.

The old coyote scalp affair is approaching another crisis in its stormy life. It is reported from Sacramento that suits have already been brought by various parties against the State to meet claims of this nature to the amount of \$286,615. We believe the time has now expired during which claims of this character may be filed against the State.

We are glad that systematic agitation of the improvement of the great rivers of the interior valley is being taken up again. There has just been published the report of two engineers, writing conjointly, which proceeds upon the ground that the Sacramento river must scour out its own bed and must be helped toward that end by maintaining levees and jetties, with only enough relief at flood time to protect the levees. Their plan as outlined by the Record-Union prescribes deepening the river channel through shoals and bars where width is excessive. The escape of flood waters should be limited in volume and duration to absolute requirements for levee preservation. The jetty principle is indorsed by all engineering authorities. Remove the mud flat at the junction of the Sacramento and San Joaquin rivers. The engineers oppose cut-offs, above free outfall, because experience in all such cases proves the theory that relief above causes disaster below the cut. Weir relief is advocated only when repeated trial has shown the hopelessness of a struggle to maintain levees against flood without weirs. Crevasses must be closed and levees must be maintained in order that the river, with the aid of jetties, may scour out its own channel. Every agency should be directed to improving the channel from Rio Vista to Collinsville. This is declared to be the cheapest and only practical plan of relief. This plan sweeps away all pet schemes of relief canals and proposes to put the river back again into its old pioneer-time condition. It is an end most earnestly to be desired.

And now the wool growers propose to do their own business. According to the Salt Lake Herald, a wool growers' trust is being organized throughout the West. Already, it is stated, seventy of the leading sheep men in Utah have gone into the organization, while many of the principal wool growers in Nevada, Oregon and Idaho have also joined forces with the new organization. Abolition of the middlemen's profit and the turning of the same to the wool growers is stated to be the object of the new organization. This would seem to be the most difficult of all combines, because of the wide distribution and isolation of growers, and because the present race of dealers is so strongly entrenched. If this can succeed, our California producers ought to be well scolded for the failures they have made in the art of combination.

## Science and California Fruit Interests.

Science has been of notable service in the up-building of the fruit interests of California in various ways which it is interesting to enumerate. Science has demonstrated, by wide study along both chemical and physical lines, the superior horticultural qualities of richness, depth and penetrability in California soils as compared with the soils upon which similar fruits are grown in other parts of the world. The complement of these investigations and, in a sense, the proof of their accuracy, is the

demonstration that California fruits are larger, handsomer, sweeter and endowed with better keeping qualities than the same fruits grown elsewhere. All these facts are on record in the tables of chemical and physical analyses and are indisputable. Thus science has laid a foundation broad and strong for the free investment of capital which has been made in California fruit properties and in the manufacture of fruit products.

Science has also rendered important service by pointing out the fact that, though the above truths are prevalent and characteristic of the State, there are associated with the best soils certain soils which are defective either chemically or physically, or both, and, therefore, unsuited for fruit growing. The occurrence of such soils has been quite definitely described and their characters determined. The public is duly warned against them.

Science has demonstrated by careful climatological studies, based upon long records of meteorological observations, the general horticultural suitability of the California climates and their superiority when compared with the climates of other fruit growing regions. The local defects in the California climates, from the point of view of certain fruits, have also been carefully determined and described, and they may be avoided. More than this, science stands constantly on the watch for the approach of dangerous weather conditions and gives the grower ample warning so that he may protect his product against them. In no part of the world has such systematic aid to the fruit grower been so fully realized as in California and nowhere have the growers learned to protect themselves so effectively.

In directing and ministering to the warfare against destructive insects signal achievements have been attained. Nowhere has so much been accomplished in the introduction of parasitic and predaceous insects and such quick benefits realized. Nowhere has so much been done in securing satisfactory purity and strength in insecticidal preparations. It is reported that one of the Eastern Paris green manufacturers recently declared that the California scientists were so sharp that he had to make a special Paris green for the California trade. Science is also accomplishing wonders in circumventing grievous pests by teaching growers the advantages of employing the natural resistance which certain species of plants possess, thus invoking for the aid of horticulture the very agency which nature employs in maintaining her own equilibrium. Another great service of science to California is the successful introduction of an insect, not to destroy other insects, but to distribute fructifying pollen to the concealed blossoms of our figs—succeeding by scientific methods in the acclimation of this insect after horticultural methods had failed for a quarter of a century.

Science has been of inestimable service in ministering to the advancement of various fruit products. Difficulties arising in the canning and drying of fruits have been explained and remedies prescribed. Processes of vinification have been modified to escape obscure obstacles. The pickling of the ripe olive has been freed from some of its serious troubles by scientific study of the subtle causes thereof.

The application of advanced scientific principles to the creation of new fruits has accomplished wonderful results, and Burbank has won for California world-wide fame in the highest lines of scientific pomology.

Science has been the handmaid of California horticulture from the very beginning. In a country of essentially new conditions, in developing lines of production largely new to the American people, and in some instances new to the world, problems have arisen which, by the old empirical method, would have required generations to successfully solve. Here, within the span of a single generation—in fact, within two decades—new methods have been devised and new inventions have been introduced until California fruit products attain an annual value of between \$30,000,000 and \$40,000,000—far greater in value than any other group of allied products in the State. There is no more wonderful illustration of rapid advancement attained by an intelligent and energetic people, and the attainment has been possible because of their eagerness to employ every aid of science in their exceedingly complex and novel undertakings.



# QUERIES AND REPLIES.

## Roots for Prune Trees Again.

To THE EDITOR:—In your issue of March 22d you answered some questions of mine about roots for prune trees. I believe that over most of the land there is a heavy bottom clay of indefinite depth, but as we dig down it seems to be very dry; I don't think there was any standing water on hardpan. The roots available at neighboring nurseries are peaches. What do you think of peach roots? You do not mention them in your reply to my questions. Do you think I had better send off for some trees on Myrobolan roots? I hardly think the hardpan severe enough to warrant blasting.—ORCHARDIST, Tulare.

We did not speak about peach roots for prune trees because the peach root is not well adapted for either extreme conditions of drouth or excessive moisture. It does best with favorable conditions midway between the two. As it seemed from your first letter that you were suffering from one of the two extremes, those roots which seemed to be best adapted to them were mentioned. If you think your land generally suited for fruit trees and the failure of some was possibly due to late planting or lack of cultivation or irrigation, their places could be filled with peach roots with a reasonable prospect of success, providing you guard against the recurrence of the trouble this year. It is getting too late now to incur any more delay by sending for Myrobolan roots from distant nurseries. From what you say about the dryness of the subsoil at this time of the year it does not seem likely that you have ever suffered from standing water, but rather from drouth. You can use then either the almond or peach root and arrange to secure water for irrigation. If you have to start the season with a dry subsoil there is little hope for your trees except through irrigation.

## Broom Corn and Apples on the Coast.

To THE EDITOR:—What kind of soil, climate, etc., are best adapted to production of broom corn? Will it thrive close to the coast? Can you cite me a treatise on handling it, etc.? Also, best variety of apples to produce close to the coast?—OCEANO, San Luis Obispo county.

Broom corn needs good corn land and a little more summer heat than is to be had on the immediate coast; however, quite near to the coast but with some shelter of intervening hills, it does well. The greatest amount is grown on the river lands of the interior valley. We can furnish an Eastern treatise entitled: "Broom Corn and Brooms," for 50 cents, postpaid. This gives the latest points of general interest; of course, you will grow the crop in accordance with the requirements of corn in California.

Most apples thrive immediately on the coast if soil conditions are right. The most salable varieties, such as Bellefleur, Gravenstein, Red and White Winter Pearmain, Ben Davis, King, Bretigheimer, and Wine-sap, do well. The Yellow Newtown Pippin may be unhandsome sometimes under direct ocean influences. Your planting should be of varieties most in request by local buyers for Eastern shipment, and you can distinguish between those we have named by consulting with those locally well informed.

## Ginseng.

To THE EDITOR:—What is your opinion of the vegetable described in the enclosed clipping?—G. G. FREY, Morgan Hill.

The clipping is a two-column account of ginseng growing, a subject now cutting a wide swath through current periodical literature. In California it goes to mourn, with cassava, the unsuitability of California conditions. In fact, the chance of its finding suitable environment is less than that of cassava. Ginseng is a product of moist Eastern woods—moist soil and moist air being its choice, and shade from hot sunshine is also included. So far as tried, it has failed in this State. We understand that some progress is being made at the East in artificial culture under lath shade, but it is being boomed so actively by seed and plant sellers that one can hardly sift fact from fancy. Probably plants are being brought here, and if anyone succeeds in making them grow we shall be glad to know it.

## For Red Spider.

To THE EDITOR:—Please state in the PACIFIC RURAL PRESS as soon as convenient a remedy for the red spider. Would sulphur dusted on be apt to

cause any injury to sugar prune grafts that have just started to grow? Can you name any remedy that would be better at the present time?—J. W. BROADBENT, Morgan Hill.

Dry sulphur, either the French sublimed or the most finely ground California product, is effective against the spider and is not injurious to new growth. This dry sulphur, however, acts by vaporization chiefly, and to this vaporization adequate heat is necessary. Early in the season or, perhaps, on grafts where there is perhaps less concentration of heat than upon the foliage of a denser tree the dry sulphur may not act so well as a wash. Probably the best wash for all tree mites is one which Horticultural Commissioner G. P. Hall has long commended and of which he has just given a restatement to the San Diego Union: The remedy is to mix ten pounds of caustic soda with fifteen pounds of good sulphur, mix the sulphur to a paste and add the caustic soda—98%—dry to the sulphur paste. Chemical action will immediately begin and the caustic will cook the sulphur by its own chemical fire; as it begins to boil add water to control it just as if you were slacking lime; add till you put in twenty gallons. Now of this compound, or stock solution, which will keep indefinitely, put one or two gallons in forty gallons of water and the spray is ready to kill mites. It should be put on with a good force.

## Wood Ashes and Woolly Aphis.

To THE EDITOR.—The experiment tried by E. Hope of burying fifty or seventy-five pounds of hard wood ashes around those apple trees which were badly affected with woolly aphis has apparently effected a cure. The past two years the parasite has been almost entirely absent from his three-acre orchard. For several years the trees were badly affected, and all known remedies had been tried a reasonable time without any bettering of the condition; hence, the above remedy and result of the same.—Mrs. E. Hope, Blocksburg.

We are glad to have this emphatic statement. It agrees perfectly with our own experience, and, had we received it in time, it would have added force to the statement in the same line which we made last week. But, of course, the remedy is not widely available in California, because there are so few wood ashes to be had except in a few parts of the State. A pure potash lye would, to a certain extent, act like ashes and have also fertilizing value, but it should not be too strong. One pound to six gallons of water might do. But there is one advantage in ashes, in that the lye leaches out slowly and keeps biting the bugs as they come to the root crown from the outer roots. Those who have ashes should not waste them.

## Sorghums for Grain.

To THE EDITOR:—Please inform me if there is any corn similar to the old-style Egyptian corn that will out-yield it on wet adobe land and is not so liable to be attacked by blackbirds. I should also like to know if sorghum will do well on such land, and what is the best variety to plant.—READER, Fresno.

The variety of sorghum which has largely displaced the old variety known as Egyptian corn is Kafir corn. This variety has an upright head and is less liable to bird injury than the Egyptian corn, which seems exactly arranged for them to perch upon and make way with the grain. The Kafir corn is also more satisfactory otherwise than the Egyptian and has been largely substituted for it. Any of the sorghums will grow well on low, heavy land, providing the moisture goes out of them during the summer. They will not, however, succeed well on low land which is continually wet.

## Farmers' Insurance Companies.

To THE EDITOR:—Can you give me any information about forming a county farmers' insurance company? I was in a country company in New York for several years before coming to California and I know the benefits of co-operative insurance. If you can tell me where I can get a copy of the law relating to the formation of such companies will you please do so?—READER, Winters.

There are many such companies now in California and they seem to be doing very well indeed. As you can see by turning back to the PACIFIC RURAL PRESS of July 21, 1901, there is now a State organization of these companies, of which Mr. G. F. Cromer of Los Angeles is secretary. It is his place to give all desired information about the law and other considerations involved.

## Swell Head.

To THE EDITOR:—Can you tell me what to do for sore eyes in chickens? It forms a brownish skin over the eyes and the eye is watery, and on one side of the eye it forms big lumps of matter.—READER, Kingsburg.

When the disease has reached the stage indicated in the last sentence above, the hatchet is the proper treatment. Preventive measures should be resorted to at the first appearance of the trouble. You will find good advice in the PACIFIC RURAL PRESS of September 14, 1901, and a full description of the disease in the issue of May 4 preceding.

# WEATHER AND CROPS.

## Report of the U. S. Weather Service for Week Ending March 24, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director

### SACRAMENTO VALLEY.

Grain continues in excellent condition, but its growth has been slow during the week, owing to cool weather. It is assuming a most healthy color, and with warm, sunny weather will make rapid growth. There will be unusually heavy crops of wheat and barley if conditions continue favorable. Green feed is abundant and stock are doing well. Work in hop fields is progressing rapidly. Frosts occurred during the week, but they were generally light and caused no damage to fruit, so far as reported. Deciduous fruit trees are heavily laden with blossoms and prospects are good for a large yield. Citrus fruits are in good condition. Light rain has fallen in nearly all parts of the valley.

### COAST AND BAY SECTIONS.

Cool weather is retarding the growth of grain and grass and the development of fruit blossoms. Frosts occurred in some sections, but were too light to injure fruit. Light rain has fallen during the week. Wheat and barley are in good condition, and with warm weather and late spring rains will make excellent crops. Green feed is plentiful and stock are in good condition. About 3000 acres of sugar beets will be planted at Pleasanton this season. Deciduous fruit trees are somewhat backward, but are in full bloom in some places and slowly blossoming in others. A correspondent at Hollister reports that apricots will not be in full bloom before April 1st, and that peaches and prunes will be later. A carload of rhubarb was shipped East from Alameda county during the week.

### SAN JOAQUIN VALLEY.

The weather during the week has been generally favorable for growing crops, though somewhat cool for the growth of grain and grass. High winds have prevailed in some sections and light showers have fallen throughout the valley. Frosts were too light to injure fruit. Grain is in good condition, but would be improved by warm, sunny weather. Heavy crops of wheat and barley are expected. Pasturage is plentiful. Plowing and cultivating are in progress in many places. Trees and vines are in excellent condition and give promise of a large yield. The acreage of grapes and deciduous fruits is being largely increased.

### SOUTHERN CALIFORNIA.

Light rains during the week have been very beneficial to grain and grass. The weather has been too cool for the rapid growth of crops, but they are making fair progress, and a good yield of wheat and barley is probable. Early sown barley is heading in Orange county. Pasturage is plentiful and stock are doing well. Light frosts have occurred in some sections, but caused no injury to fruit. Apricots are in bloom at Anaheim. Orange picking is nearly completed and the new buds are rapidly forming. It is reported that 250 carloads of cantaloupes will be shipped East from Indio during May.

EUREKA SUMMARY.—Conditions are generally unfavorable for farming. Grain and grass made slow growth. Some pruning is being done. Considerable snow on the hills. A large percentage of young lambs lost.

LOS ANGELES SUMMARY.—Fine rains continue and the ground is well saturated; has not been so well soaked for years. Field crops are looking finely. Honey prospects are encouraging. Warmth and sunshine are needed now.

## Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, March 26, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	1.76	44.30	41.63	34.38	52	32
Red Bluff.....	.62	27.75	22.17	20.55	66	38
Sacramento.....	.18	15.46	17.18	19.83	64	38
San Francisco.....	.28	16.95	18.84	21.66	53	40
Fresno.....	.24	6.10	10.23	10.57	62	36
Independence.....	.08	4.13	5.81	5.17	60	26
San Luis Obispo.....	.62	19.40	27.62	15.43	68	32
Los Angeles.....	.48	9.37	14.10	15.15	64	38
San Diego.....	.44	5.37	9.19	7.13	60	44
Yuma.....	.20	.68	3.60	2.88	78	36



## THE STOCK YARD.

### The Importance of Selection in Breeding Animals.

By LEROY ANDERSON, Instructor in Dairy Husbandry, University of California, at the annual meeting of the Jersey Breeders' Association of Southern California at Riverside, March 15, 1902.

As a text for the subject under consideration I want to take a few words of Prof. W. H. Brewer of Yale University, who is one of the wisest and most thoughtful students in the country upon the principles of breeding animals. The words constitute one of the laws that he laid down some years since as governing the best practice in breeding, and are as follows: "Vastly more animals are born than are needed for breeding, and only those possessing the highest aggregate of good points should be used to breed from." This principle is termed "selection." If we analyze the word and study it in its fullest sense we find it to be very comprehensive, and not only the corner stone of the breeder's practice, but the entire foundation upon which he is to build the framework and the complete furnishing of a good herd of animals. Selection includes in its scope those primary laws of heredity and variation which Prof. Brewer also defines—the former in the sense that all animals resemble their parents and ancestors in most characteristics, and the latter that no two animals are alike in all characteristics, and hence the offspring are never exactly like their parents. I say that selection includes these because in practice we retain those animals for breeding purposes which possess in the greatest degree the good qualities of parents and ancestors, or we retain those that show any decided variation for the better over their parents.

**SELECTION DEFINED.**—The theory and practice of selection also brings into play a careful observation to find out how the animals in our herds which show the most adaptability to their environment as to soil and climate; which show the greatest improvement under increased feeding; which show themselves best adapted to their special purpose, whether that be to produce meat or milk, and which are most prepotent in giving their own good qualities to their offspring. Darwin in his notable work on "Animals and Plants Under Domestication" defines three kinds of selections, viz:

1. Methodical, or that kind of selection which a breeder uses when he has in mind an ideal animal and mates his animals with the purpose to produce one approaching as nearly as possible to that ideal.
2. Unconscious, or that kind of selection which a breeder uses when he mates the best animals of both sexes without making any study of their peculiar individual characteristics and without having in his mind any fixed ideal toward which he is working.
3. Natural, or that kind of selection which we find in practice among animals in their wild or native state, and where the mind of man is not a controlling factor.

As members of the Jersey Breeders' Association of Southern California, and men who are breeding thoroughbred cattle, I presume each of you may be counted among those who are practicing methodical selection—that is, each of you carries in your mind a picture of the Jersey cow which is your ideal of what the perfect cow should be, and you mate your animals with the idea of producing living specimens of that mental picture. Such practice is the kind that results in the most rapid improvement and has worked such wonders in the development of all improved breeds of live stock, and has, moreover, given the world the families which are noted for so great powers of production. In this noble and worthy field of progress I am sure the Jersey Breeders' Association of Southern California are active workers.

**VARIATION.**—The possibility, and the power as well, of selection depends upon the fact that all organic beings are variable. It is a common observation, known to even the most casual observer, that all animals vary in their several characteristics—that the offspring are never exactly like their parents. The heifer when it comes to maturity may be almost the perfect image of its dam, but you who study both carefully can see differences in form. And if the form be very similar, the chances are that there will be differences elsewhere, possibly in the milking qualities. Variability is sure to result in all breeding. Why this is so is not so easily demonstrated as the fact that it is so. The principle which we call heredity is strong and subtle in its workings. We may see to-day the effects of an inheritance of many generations, or even a century ago, and because we behold some features in an animal which we cannot see in the living ancestors we are apt to call it an unaccountable variation, while in reality what we see is genuine heredity, only we cannot perceive the line of transmission.

**CAUSES OF VARIATION.**—There are many causes, any one of which may lead to a variation from the parent stock. Chief among these causes is the influence of food, either scarcity or abundance. In the upbuilding of all our improved breeds of stock no one factor has exerted a stronger influence than food. By an abundance of the best kinds some members of each generation have been made a little better than

the animals in the previous generation. The dairy cow has been made to produce a little more milk and butter than her dam; the beef animal has been induced to lay on his fat a little more evenly and more in the valued parts; the lines of the hog have been made slightly more even; the sheep has put on a little finer wool or a better quality of mutton; the hen has been made a little rounder and plumper, or made capable of laying a few more eggs. All these are variations that improved feeding has made possible, and, being accelerated from generation to generation by wise selection, there results a final grand improvement.

The care of the animals, aside from food, is another potent factor in variation. Climatic conditions are of great importance in this particular, and should be studied with care by all who wish to improve their live stock. Subjection to unusual cold or to cold storms causes a migration of food material in the animal's body from the work of building tissue, or of secretion, to the work of keeping the body warm. This causes a check in the development of meat or milk, as the case may be, and the seriousness of the check, or the certainty of the animal's overcoming its effects, depends upon the length of time during which the change in the use of food nutrients continues. If it be for a brief time only, the result is not likely to be serious. If the period be a long one the chances are that, in the case of a milch cow, the former flow of milk will not be recovered during the present lactation period. There is, then, a loss of food, as well as a forced change in animal function. Lumber is always considered cheaper than food to protect animals from undue exposure. Moreover, the variation, which is caused in the animal by lack of care is always a detrimental one and one that we do not wish to propagate.

**CROSSING.**—Another cause of variability is the practice of crossing breeds—that is, mating two thoroughbred animals of different breeds. This practice is one that appeals very strongly to those whom we may call the laymen among breeders. They are not strictly breeders, because they are in the stock business solely for the product of the animals, and not for the purpose of building up a herd of thoroughbred stock. They look over the different breeds and do not see one that singly combines all the qualities which they desire their herd to possess, whereat they conclude to cross two breeds, the union of which ought, from their point of view, to result in just the real thing. There is both advantage and disadvantage in this practice. The main advantage is that crossing usually results in a stronger constitution. The disadvantage is that it likewise causes an undue amount of variation. Two breeds that have been reared along special lines for generations, and whose characteristics have become fixed in different directions, are mated. There is a clash of characters, as it were, and the resultant offspring may possess the parents' virtues in equal degree, but it is more likely to possess the characteristics of the stronger parent to the largest extent, or to revert to several generations back for its inherited qualities, where the characteristics were poorer than are now possessed by the immediate parents.

A familiar example of crossing is mating the Jersey and Holstein, the owner reasoning thereby to secure the large milk flow of the latter and the high quality of the former. Why is he not as likely to secure the small yield of the Jersey and the low quality of the Holstein? At the best he is fortunate if he secures an animal which is a fair average between the two breeds. The instances where this kind of crossing has been practiced are not measured by a large proportion of successes. Experience has shown that breeding to the thoroughbred idea is the right road to success. Crossing may cause a good variation, but, once caused, there is little opportunity to take advantage of it because it cannot easily be perpetuated. If we breed the animal possessing the desired variation to another cross bred, we are quite as likely to cause retrogression as improvement. This practice is one of the means of forming new breeds, but building new breeds is an art requiring the highest degree of skill and intelligence. And why try to form new breeds when there are enough old ones to fit any possible condition or set of conditions? If we breed to a thoroughbred of either of the two breeds we are returning to the thoroughbred idea, where we might better have remained at the beginning and seek our improvement through a less radical variation.

**CROSSING AND SELECTION.**—I take it that the breeders of thoroughbred stock are seeking to-day to cause variability in order that there may be some opportunity for the practice of selection. Were there no variability, all animals would be alike and there would be no selection; neither would there be any improvement. Even though the breeds of farm animals have reached a high stage of improvement, no one believes that the opportunities for improvement are passed. There is a higher authentic record for butter production to be made than is now on the books, and, what is still more important and far-reaching in its effects, the average production of even registered cows is capable of being increased to a very large degree. The kind of variation that breeders are attempting to cause is not of the radical sort—not the kind that marks a decided differ-

ence between individuals. Variations of this sort are difficult to perpetuate, even though they may be in the right direction. The variation that is attempted is the gradual change—a slight improvement from generation to generation caused by improved food conditions, better care and judicious mating of animals which show tendencies to vary in the right directions. The gradual change is more easy to perpetuate than the marked variation, which makes an animal stand out from the members of its own breed almost as much as it would from the individuals from another breed.

(TO BE CONTINUED.)

## THE POULTRY YARD.

### What To Do for Ticks.

There is much trouble with ticks among the poultry people of the interior valley and it is very difficult to overcome. The same trouble exists in Australia, and the Victorian Agricultural Journal has an article on it which will be suggestive here.

**How Ticks Grow.**—The female, which is larger than the male, lays a great number of eggs. The eggs are laid in clusters of from 30 to 100 or more. In some cases even the young are born hatched. The eggs are laid in crevices of woodwork, or under the bark of trees, or in any sheltered situation. They may even be laid on the body of the fowl—under its wings and legs and along its neck. The young are soon hatched. They are about one-twenty-fifth or one-thirteenth of an inch long, and are very unlike the adult form. They possess three distinct pairs of legs.

These parasites frequently moult and seem, even when deprived of food, to regain new vigor after moulting. They can be kept twelve months without food. During the first and second stages of development the ticks may be found attached to the bodies of fowls day and night, and they seem to do a great deal of injury to the birds.

**HABITS.**—The adult forms are nocturnal in habits, i. e., they move about at night, but the young in many cases appear to cling to the birds both by day and by night. The adults hide by day in the crevices of the fowl houses, or under the bark of trees, or other secluded places, and may even perhaps hide under the wings of fowls, and they issue forth at night to commit their depredations. They prey on the blood of fowls and cause anaemia and death. When they have sucked themselves full of blood, they fall off the fowls and retire into the crevices, and come out again hungry. When they bite their victims they may also inject a poison into their blood streams. The bush tick (*Ixodes plumbeus*), injects a poison into its victims. Its bite sets up considerable irritation around the spot. The fowl ticks creep in masses upon their victims and get under their wings and legs.

**SYMPTOMS PRODUCED BY THE TICK.**—The symptoms are indefinite. The fowls droop, refuse to eat and drink, and in a few days they are unable to move about and die of exhaustion. As the ticks are not, except in rare cases, seen about by day, the cause of the mortality may for a long time escape notice; but examination of the fowl houses at night will eventually lead to the discovery of the cause. The presence of the young forms on the bodies of the birds settles all doubt.

**REMEDIAL MEASURES.**—Fowl ticks are very tenacious of life, and the only way they can be destroyed, when found upon the bodies of fowls, is by resorting to remedies that, while suffocating them, will not injure the birds. To kill these pests it is necessary to block up their stigma or breathing pores, by which air is admitted to the air tubes. When their breathing is arrested, they die practically of suffocation. I have found by actual experiment that kerosene alone is not an effective remedy, but that kerosene and soap emulsion is. Oil alone is not to be relied upon, but a mixture of oil (two parts), caustic potash 10% solution (four parts) and kerosene (six parts) is a deadly compound to tick and makes a most effective dip. Solutions of 1 in 250 of formalin (40% solution) make effective dips. Mixtures of kerosene and oil bring about death, so also do mixtures of oil and caustic potash. Strong solutions of ammonia in time kill them, but alcohol entirely fails to injure them. Strong solutions of either arsenious acid or perchloride of mercury are absolutely worthless as remedies.

**TICK-PROOF HOUSES.**—When fowl tick appears on a place there is no other course open, if the owner wishes to rid himself of the pest, but to pull down wooden fowl houses and erect corrugated iron ones, capable of being readily dismantled. The whole outside—roof and sides—should be coated with asbestos paint, as that tends in summer to produce a diminution in the temperature of the building. The whole inside should be tarred. The houses should be from time to time dismantled and washed with solutions of lime and sulphur, and then again tarred over. The roosts should be supported on a framework suspended by wire supports, attached to fittings on the roof,



and no part of the framework or its fitting should be brought up close to the sides of the building. The wire supports of framework should pass through sealed tin cup-like arrangements, and the cups should be kept continuously full of strong solutions of formalin or of the oil and kerosene mixture.

All places that harbor tick should, where practicable, be burned; but, where this is impracticable, all crevices should be cemented up and coated with tar. Ticks hide sometimes under the bark of trees, and such trees should be uprooted and burned. No half-measures are of any use in attempting to exterminate this pest, but the most drastic measures should be adopted to secure successful eradication. All crates arriving from places where fowl tick abound should be destroyed, as by means of such crates the disease may get introduced into localities previously free from it.

## HORTICULTURE.

### Treatment for the Codlin Moth.

It is time for our usual spring exhortation to save the apples and pears from the codlin moth. More is being done each year in this direction, but still there is chance for more to follow.

**CODLIN MOTH IN THE SAN JOAQUIN.**—Mr. E. Tout gives the Alta Advocate his conclusions about spraying for the codlin moth. He says that those who have sprayed in his locality the past three years have got practically nothing.

**HOW TO SPRAY SUCCESSFULLY.**—Take one-quarter pound of good Paris green (which is hard to get), with the same quantity of lime, to a forty-gallon barrel of water. The lime is to keep the poison from burning the leaves. Get a spray nozzle that, by a strong pressure will create a fine mist. Spray all over the tree, being careful to stop before the liquid begins to drop from the leaves. The first spraying should be done when the petals are dropping off. This puts the poison in the end of the bloom, or in the calyx cup, which closes up and forms a storage poison for the little fellow. The larva generally begins to work at this point when the fruit is small. The second spraying should be within fifteen or twenty days after the first, and so on until the first of September. After the second spraying there should be something tied lightly around the trunk of the tree to catch the young larva as it leaves the fruit. They will collect between the bark and the wrapping, spin their cocoon, and in a few days come out a full-grown moth.

These wrappings should be taken off once a week and the larva destroyed. This can be effectually done by running the wrappings through a wringer and then tying them back to catch more.

If there should be a colony of ants near a tree, but few larva would be found under the wrappings.

**EXPERIENCE.**—In 1899 I sprayed once and lost my crop. In 1900, sprayed three times and got 10% of a crop. In 1901, sprayed five times. From fifty-five trees of the Ben Davis apple, ten years old, I sold in Fresno three and three-quarter tons at a net profit of 2 cents per pound. Also sold \$60 worth at home, making in all \$210.

Some people are asking: "Shall I put out a few apples for family use?" Of the early varieties it will do, but on the winter varieties the moth has a much longer time to work, and knowing that the average grower will not take the trouble to spray a few trees, we believe something else would be better.

**IN THE SANTA CLARA VALLEY.**—J. Luther Bowers of Coyote writes for the San Jose Mercury the results of his long experience with the codlin moth. We make the following extracts:

**HOW AND WHEN TO SPRAY.**—The first spray can be made stronger than later. While many use one pound of Paris green to 200 gallons of water, one pound to 150 gallons is not too strong for the first application. Two formulæ are in general use, viz., one pound of Paris green, five pounds lime, 200 gallons of water; slack the lime beforehand, and when settled draw off the clear water, and in this reduce the Paris green to a paste; then add this to the water. The other formula is one pound Paris green, one-half gallon washing ammonia, 200 gallons of water. Use the ammonia to reduce the Paris green to a paste, then add to the water. Most persons use a fifty-gallon barrel. In such a case use only one-fourth of the above proportions. Our own pet formula is as follows: One pound Paris green, four ounces carbolic acid (liquid), 150 gallons water, for first spraying; 200 gallons water for second spraying. Reduce the Paris green in two gallons of water, then add to the balance of water. To this add the acid. Stir well, for if not stirred frequently and well the green will go the bottom and the acid will rise to the top. This spray has one advantage over anything else; the smell of the acid will drive the moth away alone. All spraying fluid while being used should have an agitator constantly going, for the reason that the Paris green will settle to the bottom. For the single fifty-gallon barrel nothing is so good as a dasher, similar to the old upright churn dasher, and at intervals of about two minutes raise

it up and down twice. This will keep the fluid well mixed.

**TIME TO SPRAY.**—We would commence as soon as the petals have fallen from the bloom, and, to make a success as near as possible, would spray on the tenth, thirtieth, fiftieth and seventy-fifth days following, making five sprayings for late winter fruit, three for fall fruit and two for summer fruit. Always select a very calm morning, and do not be afraid to get out early, for at the time the spraying should be done the wind begins to blow about 9 or 10 o'clock. Then you had better stop, for you will be wasting your time and material as well. Be sure that your Paris green is chemically pure.

A strip of burlap 4 inches wide and long enough to go around the body of the tree 2 feet from the ground, drawn very tight at the top and secured by one to two-penny nails, will leave the bottom loose and the worm will crawl up under and pass into the chrysalis state. These bands should be put on ten days after the second spraying, not later, and looked after once a week. Use a piece of board and a claw hammer; the board to press against the burlap and kill the worms; the hammer to draw the nail so you can clean the cloth and renail. Don't kill the yellow-hammer and striped woodpecker. They make a few holes in your houses and peck a lot of holes in your fruit trees, but they pay you back by killing thousands of codlin moths in the chrysalis state.

If the above directions are followed to the letter a clean crop of 90% to 95% of good salable fruit free from codlin moth can be secured. Remember that eternal vigilance is the price of a good crop of fruit.

### The Hen as an Income Producer.

The agricultural reports for some of the Eastern States, recently published by the Census Office, contain statistics of the production of eggs and poultry, which, while not to be taken as indicative of the conditions prevailing in other States, or in the country as a whole, are full of significance and deserve careful attention.

In the States reported upon, the value of the poultry and eggs produced in 1899 was from about one-twelfth to one-sixth of the total value of all farm products, ranging from 8.1% in Maine to 16.7% in Rhode Island. Of the total value of all animal products, it formed from one-fifth to one-third, ranging from 18.9% in New Hampshire to 37.2% in Delaware.

The ratio between the value of the poultry and that of the eggs produced during the year is worthy of note. The egg production was worth 68.1% of the value of both eggs and poultry produced in Maine, more than 60% in other New England States, 46.1% in New Jersey, and 45% in Delaware.

A comparison may be made between the increase in the production of eggs during the ten years from 1880 to 1890 and the increase in the following ten years—1890 to 1900. The increase during the former decade in Maine was 33%; in the latter, 42%. In New Hampshire: Former, 51%; latter, 39%. In Massachusetts: Former, 36%; latter, 45%. In Rhode Island: Former, 29%; latter, 59%. In New Jersey: Former, 20%; latter, 49%, and in Delaware, during the former decade, 56%, and in the latter, 61%.

It appears, therefore, that the increase in egg production in the East has been much greater than that of population, and is an accelerating one. In the States mentioned, it is now sufficient to double itself in twenty years.

## METEOROLOGICAL.

### What the Japan Current Does Not Do.

We have had during the last few years such strong endorsement of the Japan Current as the source of all our weather blessings it is interesting to show the view, endorsed by the Weather Bureau, that this current is only a part of a more stupendous force working for our benefit. In the last bulletin of the American Geographical Society Mr. Henry Gannett writes upon "certain persistent errors in geography," among which the wrong conception of the effects of our Japan Current is involved.

**CLIMATE AND OCEAN CURRENTS.**—Other familiar errors concern climate still more directly. The well-known mild climate of the northwest coast of America is commonly attributed to the balmy influences brought to it by the Japan Current; the Gulf Stream is supposed to have the same influence upon the west coast of Europe, and the cold climate of the east coast of the United States is attributed to the supposed current from the Arctic ocean hugging this coast.

That these explanations do not explain will be realized after reflection. Can it be supposed that the Japan Current, however warm it may be when it leaves the Tropics, retains any appreciable excess of heat after a journey of 6000 miles in northern latitudes? As a matter of fact, no trace of this current reaches the shores of North America, its force being entirely lost thousands of miles to the westward. There is nothing left but the merest drift of the surface water before the prevalent west wind.

In the north Atlantic the condition is much the same. The Gulf Stream loses its velocity and disap-

pears as a current long before the British Isles are reached. That the cold climate of the eastern coast of the United States is caused by an Arctic current close inshore is disproved by the fact that there is no such current along this coast.

**WINDS AND OCEAN CURRENTS.**—There is probably no phenomenon connected with the physical life of the earth which has been the object of greater misconceptions than the currents of the sea. The maps of the schoolbooks are covered with lines and arrows, indicating currents in every conceivable direction, every temporary drift of surface water reported by navigators having been recorded as a current.

The system of oceanic currents is very simple: a drift of water toward the equator, a current along it, flowing westward to the land, there dividing, flowing north and south and dispersing.

This equatorial current has been attributed in the text-books to a variety of causes. The unequal heating of sea water in different latitudes is a favorite explanation. This, however, could produce currents only by changing the volume of the heated water, and unfortunately, if the water under the equator appreciably expanded by heat, it would cause currents in the opposite direction from those which exist; we should find them flowing away from the equator instead of toward it.

Another explanation given is the increased evaporation in the Tropics, thus lowering the surface of the water and causing an inflow from north and south. Were this of any appreciable magnitude it would undoubtedly cause a drift of water to equatorial regions, but there would be no corresponding outflow, such as the Gulf Stream and Japan Current.

A third cause assigned is the diminution of atmospheric pressure on the sea in the Tropics, produced by the heating of the atmosphere and its consequent rarefaction. This amounts to a fraction of an inch in the barometric column, and is, therefore, a small matter. Undoubtedly, if it had an appreciable effect upon the sea, this effect would take the form of a slight flow of water toward the equator; but, when equilibrium was thus established, there would be no further flow toward the equator; nor would there be any flow at all away from it.

Still another cause assigned is the increase in density of the water under the equator, due to excessive evaporation, thus increasing the saltiness of the water. It is difficult to see what effect would be produced were it appreciable.

The true cause of the ocean currents is sometimes mentioned in the text-books; but excepting in two of the most recent ones, is given little or no prominence. The initial cause is the trade winds. These blowing constantly from the northeast and southeast, induce a drift of the surface water in their directions. These two drifts meeting near the equator flow along it westwardly, developing into a well-defined equatorial current. In the Atlantic this current, after flowing across the ocean, impinges on Cape St. Roque, Brazil, where it divides. The smaller part turns southward and skirts the coast of South America, fading out near the latitude of Cape Horn. The northern, and much the larger part, flows through the Caribbean sea and the Gulf of Mexico, gathering strength and momentum in the narrow passages through which it is forced by the body of water behind it, and enters the Atlantic through the Strait of Florida. Here in the open sea it rapidly widens, shallows, and loses its velocity, and in the middle Atlantic is reduced to a mere drift, gradually turning southward to repeat its long journey.

What takes place in the Atlantic takes place on a much larger scale in the Pacific. From all parts of that great ocean within the Tropics the surface water is driven to the neighborhood of the equator by the trade winds. Along the equator it flows for thousands of miles in a great current. On reaching the land it divides, and the southern portion subdivides, time after time, and finally is lost among the maze of islands constituting Australasia. The northern part skirts the Japanese islands, gradually turning to the northeast, as it gets under the influence of the prevailing westerly winds, and soon disperses in the great waste of waters of the north Pacific.

These are the great oceanic movements. They are initiated by the winds, and their course is modified by the winds and by the shores. Besides changing the courses of the main currents, the shores and islands divide the currents, sending off numberless little minor streams of water in various directions.

**INFLUENCE OF THE OCEAN ON THE LAND.**—The land absorbs heat rapidly, and as rapidly cools. Water, on the other hand, is heated slowly and holds its heat longer. Moreover, the sea is constantly in motion, its waves, tides, and currents—especially the latter—tending to create a uniform temperature throughout its mass. In consequence of all these conditions, the sea has a much more uniform temperature in its different parts, and at different times than the land. It is warmer in high latitudes and cooler near the equator; it is warmer in winter and cooler in summer. It follows, further, that the coasts on which the prevailing winds are from the sea, share in this amelioration of climate, while the interior of continents and coasts on which the prevailing winds are from the land do not share in this amelioration of climate.



## Agricultural Review.

### ALAMEDA.

**BIG BEET FIELDS.**—Oakland Enquirer: The beet raisers in the vicinity of Pleasanton are very busy this fine weather getting in their beets. About 3000 acres will be planted there this season.

**APRICOT PLANTING.**—H. Sorenson, who set out 400 apricot trees last year near Hayward, has found that they did so well that he is setting out 2000 more of the Blenheim variety this spring.

### CONTRA COSTA.

**SHIPMENTS OF ASPARAGUS.**—Antioch Ledger: Daily shipments of asparagus to the East from Antioch are now being made. It is brought down the river in steamer in the afternoon, and, if the boat reaches Antioch in time to catch the 10 P. M. Santa Fe overland train, it is shipped over this route; if not, it is shipped over the Southern Pacific the next day at 11 A. M. Nothing but the choicest is being shipped. In four days from the date of shipment it is on the very swellest dining tables of the East. It is said the boxes, containing on an average about twenty-eight pounds each, bring \$12 per box. The express is about \$1 per box. The grass is packed in bunches with a layer of moss in the bottom, and each bunch is wrapped in a piece of white paper of an oily substance. Later in the season the asparagus will be canned. The Hickmott Co. of Bouldin Island is the shipper.

### FRESNO.

**PUMPING FOR IRRIGATION.**—Enterprise: A. Spurbek, manager of the Midland Orchard Co. at Pixley, is irrigating successfully a tract of sixty acres. He employs a 7 H. P. engine and a centrifugal pump over a 10-inch well, discharging 6 inches of water. He burns crude (Coal-liga) oil that costs laid down 5 cents per gallon, but if purchased in carload lots would come much cheaper. Mr. Spurbek runs his plant at a cost of 78 cents per day, which includes gasoline, lubricating oil, fuel oil, etc., and irrigates easily six acres per day of ten hours. The pump is set down to water level, with pit plenty large for attending to plant. A plant similar to one above mentioned, and one that will furnish a cubic foot of water per second elevated 35 feet into a ditch, can be put in for a little less than \$1000 complete.

**JOHNSON GRASS FOR HOGS.**—George B. Otis has demonstrated that the much abused Johnson grass has proved to be one of the very best hog feeds that we can produce. Hogs consigned to Johnson grass pasture will grow fat in a surprisingly short time. The grass seems to possess great fattening power.

**PLANTING PEACH TREES.**—R. D. Chittenden, manager of Porter Bros. Co., has set out an 80-acre peach orchard 4 miles northwest of Fresno.

**FINE CATTLE.**—Fresno Democrat: E. R. Perry of the Monticeto vineyard is elated over the receipt of news that his brother, M. B. Perry, one of the noted prize cattle raisers of the East, has signified his intention of bringing to Fresno county fifty head of the famous Angus breed this fall. M. B. Perry has captured no end of prizes for his exhibits of graded stock; among them the first Angus special at the Chicago Stock Show for Angus steers under two years old was second in class 199 for fat steers. Mr. Perry has the reputation of possessing as fine a herd of cattle as can be found on the continent.

### HUMBOLDT.

**HEAVY WINTER AT BLOCKSBURG.**—TO THE EDITOR: The past seven weeks have been almost continuously rainy, with southeast gales. All vegetation is at a standstill, presumably lack of sunshine being the cause. The rainfall for February was 34.55 inches, and for the season to March 1st 61.78 inches. The snow on the mountains is very deep.—MRS. E. HOPE.

### KINGS.

**MAKING MONEY OFF ALFALFA LAND.**—Hanford Sentinel: L. D. Coombs, of

Bakersfield, is making preparations to sow his lake land, which lies south of Le-moore, to alfalfa. Mr. Coombs was one of the first men to bring the lake bottom under actual cultivation. He states that he has found that the land is best adapted to the growth of alfalfa, and for the past six years has done nothing toward the improvement of his land except to sow it to alfalfa seed. He owned several hundred acres near Angiola, where he got a good crop of alfalfa seed started, and about two weeks ago sold his entire tract for \$15 per acre. He is now going to try the same scheme on his land south of Le-moore and will sow about 250 acres this spring.

**HONEY FOR THE EAST.**—C. K. Decker, the bee man of Angiola district, has sold for shipment to Indiana three tons of honey for \$80 per ton.

### LOS ANGELES.

**THE PEACH MOTH.**—Ventura Independent: Considerable loss was sustained last season from the ravages of the peach moth, dozens of specimens having been gathered in the San Fernando valley, where this comparatively new pest seemed most active. Peach growers of this section have in prospect a fine crop, the trees having resumed their normal condition after two years of sour sap or other debilitating disease. Those who expect to fight this pest, as many are doing at Glendale and other points, should get their sprayers into immediate activity.

### MENDOCINO.

**GREAT LOSS OF LAMBS.**—Ukiah Dispatch Democrat: According to reports received from the sheep men throughout Mendocino county, the heavy storms have played havoc with lambs and sheep. In the northern part of the county it is estimated that fully 80% of the young lambs were drowned or frozen to death, while in other sections the loss is about 70%. It is safe to estimate the loss in general figures at 75%. On the Hardin ranch over 800 lambs were found dead on the range. The wool men feel somewhat discouraged over the situation.

**ONE HUNDRED DOLLARS AN ACRE.**—On Wednesday of this week John Brown closed the sale of his ranch of 32½ acres, about three-fourths of a mile below Ukiah, to Israel Snyder and wife, late of Fresno. The price paid was \$3250, or just an even hundred dollars an acre.

### MONTEREY.

**PLANTING WHITE BEANS.**—Bentley & Littlefield, who are farming the Corey place near Buena Vista, will put in 100 acres of white beans this year.

### NAPA.

**TO FIGHT FROSTS IN IMPROVED FASHION.**—Register: M. Thellig is prepared to smudge, but fears that he might not awake some morning when there is a sudden drop of temperature, so he is having an electric alarm system put in. This invention is a device by virtue of which the danger of damages due to the ravages of frost may be announced to the orchard owner. A thermometer mounted with electric wires is placed in the vineyard or orchard, as the case may be, and when the temperature falls to the frost danger point—34°—an alarm is automatically rung in at the house, arousing the husbandman, who has yet time to awaken his assistants and begin smudging, thus putting a quietus upon the impending frost, as far as his property at least is concerned.

### SAN BERNARDINO.

**ICING ORANGES EARLY THIS SEASON.**—Sun: The first car of oranges to be packed in ice this season left the local railroad yards for the East Monday night. The fruit was shipped from Arlington, and, owing to the heat that is encountered crossing the desert, it was thought best to pack the fruit on ice, and from now on until the end of the season ice will be used in large quantities. The orange season is rapidly drawing to a close, and a few days more will see the end of the heavy shipments, though stray consignments will continue to go East for a few weeks yet to come.

**CHINO BEET CROP.**—Chino Champion: It is safe to say that the prospects for a beet crop, both in acreage and yield, are better to-day than they have been at any time for five years past. There will be planted for the Chino factory between 9000 and 10,000 acres—probably nearer the latter figure. Putting a very conservative estimate of yield on this acreage, the agricultural department of the sugar company figures on at least 90,000 tons of beets to be worked at this factory. This will mean a four months' campaign with all its incidental activity in labor and business.

### SAN DIEGO.

**GOOD OUTLOOK ON HONEY CROP.**—San Diego Union: Mr. Irwin of Irwin & Co. was asked yesterday as to the prospects of the honey crop this year. "Of

course," said he, "it is rather early to predict from the fact that the critical time with the honey business is in April and May. We have had some good rains, and if we do not have any extreme hot winds from the desert, which would tend to strip the blossoms, thus taking away the foundation for the honey, we shall have a very large yield. The most of our honey is produced in the Lakeside, Julian, Fallbrook, Pala, San Jacinto and Temecula districts."

**BEEKEEPERS' MEETING.**—Escondido Times: At the meeting of the Escondido Beekeepers' Association on March 15th, the following officers were chosen for the year: President, R. B. Borden, Richland; vice-president, E. G. Norton, Bernardo; secretary, M. D. Nichols, Escondido. The association has the same object in view as last year. The meeting adjourned to April 12, at 2 o'clock P. M., when the prices submitted will be considered, also other matters of importance.—M. D. NICHOLS, Secretary.

### SONOMA.

**MORE BLOODED CATTLE SOLD.**—Petaluma Courier: Brown & Brandon made another sale recently of their blooded stock. John Thurman of Point Arena bought the yearling Ayrshire bull, Field Marshal, herd register No. 6665. Mr. Thurman also bought an Ayrshire heifer, Gurta's Lass of Larchbrook, also by Ohio Boy. Her dam was Miss Gurta, a descendant of the Gurta family. Brown & Brandon have up to date sold twenty-five head of their stock—in fact all they intend to sell, as they intend to retain a number of animals for the improvement of their own herds.

### SAN LUIS OBISPO.

**PLANTING BLACK-EYE BEANS.**—Happy Steadman, of Huasna, is preparing a 200-acre field, which will be planted to Black-eye beans.

### STANISLAUS.

**REPORTED TRANSFER OF RANCHO EL PESCADERO.**—Modesto Herald: The death of J. D. Patterson in New York on the 8th inst. has served to place in circulation a report, based on an understood pre-arrangement with Patterson's successors in interest, that the great Rancho El Pescadero will pass into the hands of H. Miller, or of the San Joaquin and King's River Canal Co., of which Miller is the controlling factor. This property extends for 10 miles on the west side of the San Joaquin river in this county, between Crow's Landing and Grayson, and is 3 miles in width, the acreage, therefore, about 19,200. Some of it is sublet and is devoted to grain; quite a percentage is held for cattle range.

It is rumored that Miller & Lux will extend the outside canal from Los Banos creek to Garcia creek, a distance of nearly 20 miles.

### TEHAMA.

**GAINED EIGHTY PERCENT OF LAMBS.**—Red Bluff News: Anton Nunes, of the Jellies Ferry country, says he lost many lambs during the lambing season from the severe storms, but still he marked 80% of the lambs, an increase which under the circumstances he is well satisfied with. He commenced lambing on February 10th, being caught in the worst of the storms.

**COMMENCED SHEARING EARLY.**—S. D. Wilcox has commenced shearing the hand of sheep he has ranging on Coyote creek. One load of the spring wool has been hauled to town to be shipped to the city.

**WILL SOW TO OATS.**—Flowing on the D. S. Cone ranch is going on, but is being done with mules instead of the big traction engine. The work is being hurried along to get the ground ready for sowing a tract to oats. At the present time the traction engine cannot be used because the ground is so soft that its immense weight mires it down. About the first of the month summer fallowing will be commenced, and then the engine will be used for drawing the plows.

### TULARE.

**ANOTHER COYOTE CURE.**—Alta Advocate: The following is recommended by a successful hunter of coyotes in our foothills: Cut liver in small chunks, handling it with a stick or old meat forks; insert strychnine in each piece; dip the pieces in gall, and they are ready to sow. To be successful, remember, do not handle the bait with your hands, and, when you distribute it, go on horseback, trailing behind you a piece of fresh meat or entrails. The idea of dipping the bait in gall is new, but he informs us that animals of the canine family all like meat with this particular sauce.

**ABOUT EGGS.**—Register: Time was when F. M. Shultz had the greater part of the business in town and thought he was doing well if he got in ten to fifteen cases of eggs on Saturday, with perhaps two or three cases for the rest of the town; but now there are Saturdays when fully fifty cases are brought in. However,

there are also Saturdays when the market is very bare of them. The mistake farmers make, so the dealers tell us, is in not setting hens when eggs are high, so as to have plenty of pullets to lay for them when the old fowls are molting and the market is bare of eggs; but the temptation to sell eggs when they are worth 30 cents a dozen is too strong to allow much setting of hens to be done. And this is where they make a mistake.

### VENTURA.

**GIGANTIC LAND DEAL.**—Democrat: A gigantic real estate deal was consummated recently whereby title of the famous L. Schiappa Pietra ranch has been vested in an English syndicate. For this property the handsome sum of \$1,113,880 was paid. According to the statement of Mr. Power, general manager of Schiappa Pietra's interests, the property was first deeded to E. L. Temple, who in turn transferred it to the California Fruit & Farming Co., Ltd., of Manchester, England. This colossal transfer covers 7000 acres of the most fertile land in the county, and is the best Lima bean producing stretch of soil in the world. The conveyance also carries with it 55% of the shares of the stock of the Santa Clara Water & Irrigation Co., which furnishes the best irrigation system in the county. The new owners will expend \$50,000 at once to further improve the same by developing 500 inches of water to irrigate some 2000 acres, styled mesa lands.

### YOLO.

**SHOOT DUCKS TO PROTECT CROPS.**—Chico Record: Deputy State Fish and Game Commissioner F. W. Bryan is reported as intending to cause the arrest of four men whom he saw shooting ducks on the Yolo county side of the Sacramento river last Sunday. Mr. Bryan saw the men shooting and saw ducks fall. The men admit shooting, but claim that they killed no ducks. If Mr. Bryan cared to extend his investigations further he could no doubt catch many an honest farmer violating what the last Legislature called a game law, and if he asked them why they were violating the law he would in all probability be answered in this vein: "A law which deprives a man of the constitutional right of protecting what is his, whether it be from the invasion of mortals, beasts or fowls, is a mighty poor law. Now, do as you please, Mr. Game Man."

### NEVADA.

**A STEAM BRUSH DIGGER.**—Stockton Independent: G. W. Grayson, a San Francisco capitalist who owns large tracts of land in Nevada, and who was in the early days one of the successful mining men of the Silver State, came to Stockton, Cal., with his son-in-law, W. C. Ralston, to look at traction engines. Mr. Grayson has undertaken to clear the greasewood from a tract of 4000 acres of land in Nevada which he has planned to transform into an alfalfa field. He has been doing the work with teams at considerable cost and with disaster to the animals, as the sharp thongs on the brush cut into the legs of horses and mules. The successful use of traction engines led him to investigate their cost and adaptability for such work as he has undertaken. Mr. Grayson contracted for a big traction engine which he will use on his Nevada ranch in the place of horses. It is to be a 40 H. P. machine and will be lightly equipped for the particular work it will have to do. The plan is to fit up a long T-rail with grappling irons so the contrivance will grab the clumps of greasewood as it is hauled over the ground, and the work of clearing the land will be soon finished. The greasewood brush is well rooted and requires a strong pull to uproot it, but the machine is guaranteed to do the work quicker and much easier than it could be done with animals. Mr. Grayson's machine cost him about \$4000. His alfalfa field will be used for feeding stock on his big Nevada ranch.

### How's This?

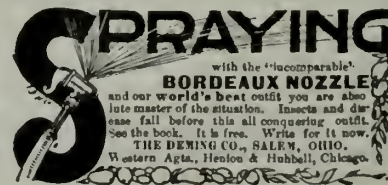
We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Props., Toledo, O. We, the undersigned, have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions, and financially able to carry out any obligation made by him.

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**Caustic Balsam**

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

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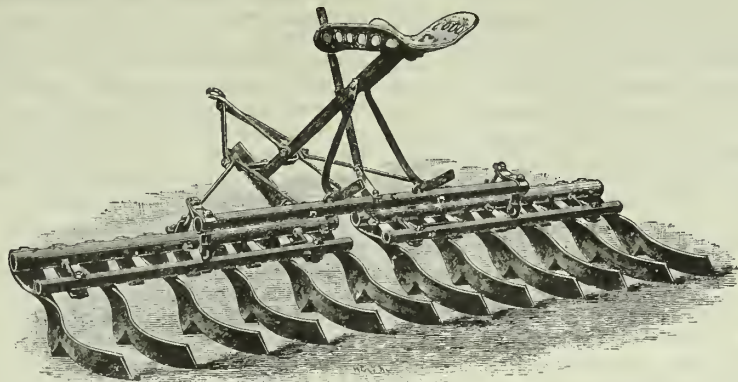


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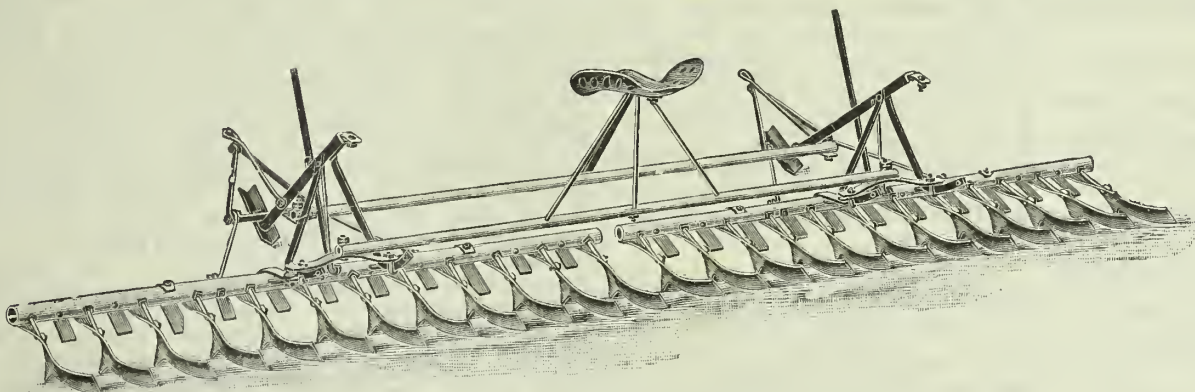


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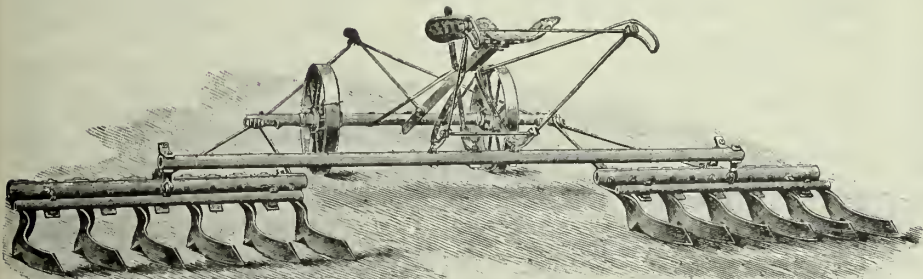


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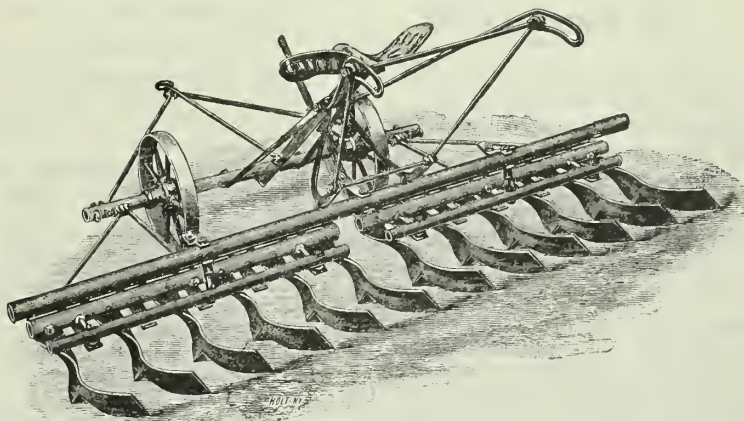
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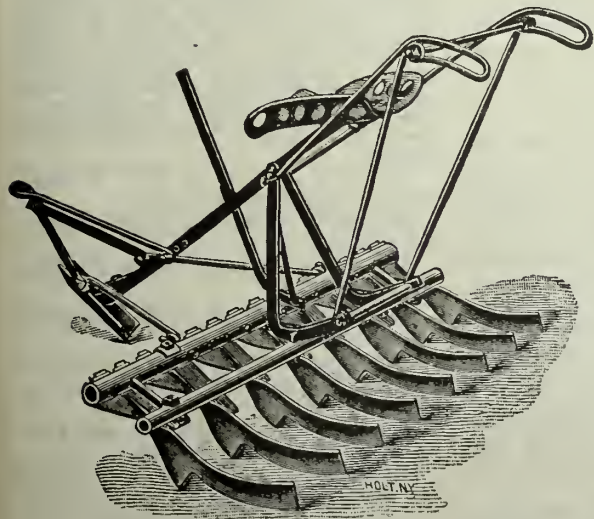
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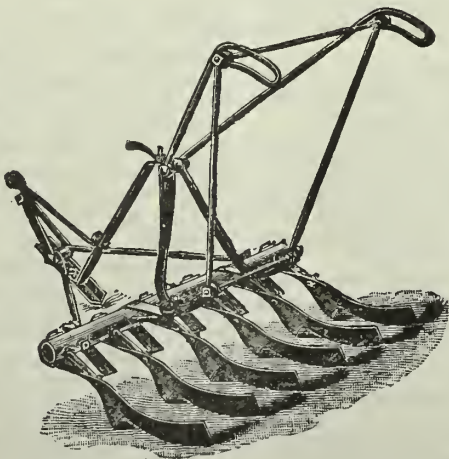
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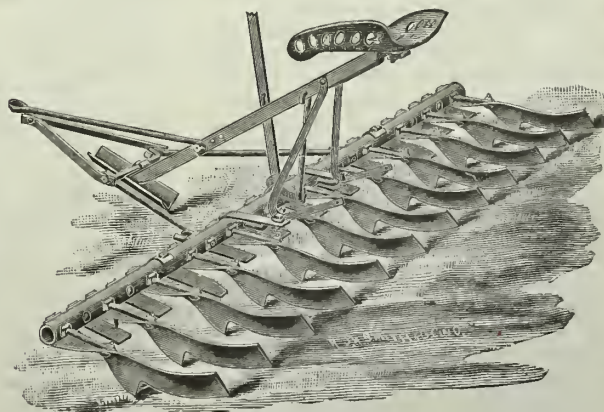
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## THE HOME CIRCLE.

## When Pa Begins to Snore.

My pa's got somepin' in his nose that's fastened there to stay,  
That all the neighbors wishes he would lose or give away.  
Some sort o' bellerin' affair, like bulls has in their throats,  
Or like a big bass horn, except it never plays no notes.  
Ma says it's sleepin' on his back, he says it is katarr,  
But you can bet your bloomin' life what-ever it may are,  
It's there fur doin' bizness, and it does it, too, fur sure,  
As all the neighborhood kin tell you when pa begins to snore.

Ma says if she'd a' ever knowed that he was such a fright,  
A tryin' to skeer the livin' out an' rise the dead at night,  
She'd never have consented fur to be his lovin' wife  
An' share his sorrows an' his joys an' lead a sleepless life.  
It's hard on me the same as her, fur when I git asleep  
An' dreamin' I'm a hunter bold in the forest deep,  
I feel my hair a-risin' up to hear a lion roar  
An' then wake up in fright to hear it's pa begun to snore!

Ma says that some day when we git to heaven afterwhile,  
Where every prospect's goin' to please an' only man be vile,  
If people there is jest the same as people here below,  
She can't imagine how she's goin' to bear the load o' woe!  
She thinks that at the usual time up there among the blest  
The angels 'll be broken o' their sweet seleschul rest  
An' tumble 'round a while an' then git up an' walk the floor  
An' wish he'd never been redeemed when pa begins to snore!

—James Barton Adams.

## The Romance of a Play.

"But what put the idea into your head?" asked the leading man of the dramatist as they stood together during the rehearsal of a new play.

The dramatist was a lady—a tall, slight woman of perhaps thirty, with a striking face, lighted by a pair of large, dark blue eyes. The beauty of those eyes made people sometimes fancy Mrs. Clavering was beautiful, but she was not. She was intellectual, she was charming and sympathetic and she had suffered—you could see that in her face. Perhaps, then, she was in a sense beautiful. The leading man was inclined to think so, and he liked very much to talk with her. As for her, she thought him "a nice fellow" and admired his acting, but that was all. She smiled at his question.

"Oh, I hardly know," she said, with an absent look in her blue eyes.

Mrs. Clavering was a novelist who had not been very long in London, having spent most of her life abroad. What the leading man alluded to was, as it were, the motif of the piece. The hero, in the first act, cast off his wife and left her, declaring he would live as he chose, she hampered him, and so on. The wife, still loving the man who was so cruel to her, declared he could not shake her off.

"I shall be with you," she cries, "whether you will or not! You shall hear me call to you when the darkest hour of life comes, and if I cannot win you back to love, I will at least keep you from crime."

In the second act the hero is about to marry a rich girl. The wedding guests arrive, all is ready, when suddenly he starts; he hears his wife's voice calling to him; he is appalled, conscience stricken, he confesses his intended crime. In the third act matters have reached a climax; the hero, ruined socially, and in purse, is about to commit suicide; once more the warning voice arrests him; he flings the pistol away, and as he does so his wife enters, and the two are completely reconciled.

"A charming idea," said the leading

lady to the author, "but don't you make Margaret too forgiving?"

The stage manager came up to ask about a proposed "cut," and the leading lady turned away to ask the leading man whether Mrs. Clavering was a widow, divorced or separated.

"I'm sure I don't know," was the answer, and nobody else did.

She lived in apartments near one of the West Central squares and was always welcome in the literary and artistic circles in which she moved, and, though it was generally presumed that her husband was dead, it could not be recalled that she had ever said so, and sometimes in these days it isn't wise to be curious about people's absent or "non est" husbands. When you came to think of it, indeed, it would be difficult to assert positively that Clavering was the author's real name. Her novels were published by Alix Clavering, and when she came to London she called herself Mrs. Clavering, which might or might not be a "nom de guerre," for it was her publishers who first introduced her into London literary society, and it was not their business to disclose her real name, supposing that she had another than that under which she chose to appear.

The rehearsal was over, and Mrs. Clavering went home. She had a few alterations to make in the second and third acts, and after a slight luncheon she settled herself to the task. Settled? She seemed very restless and worked fitfully. Sometimes, for minutes together she sat with her face hidden in her hands, and more than once tears trickled through her fingers.

"They say the piece is likely to catch on," said a gentleman who, in truth, was a backer of a West End theater. He was one of a group of men in the smoking room of a rather Bohemian club, and his remark was in continuation of a desultory chat between himself and a well-known actor-manager.

"Yes," answered the other, carelessly, as he knocked the ashes off his cigar. "They say that of so many of these matinee shows, and they're generally such rot!"

"What play is that, if I may ask?" inquired a man who caught the last words.

The speaker was an uncommonly handsome man, apparently about thirty-six or thirty-seven, but he had a reckless look, not pleasant to see. A cautious man would think twice before introducing this gentleman into his home, for besides his personal looks he had a sweet toned voice and an attractive address, and with these weapons of attack he could easily conquer women's hearts, breaking them afterwards at leisure.

The "backer" answered him:

"A piece written by Mrs. Clavering, the novelist. She's not a 'prentice hand. Some one-act plays of hers have been done already."

"I remember reading one of her novels; it was clever," said Mr. Leslie. "What's the play about?"

You noticed when he spoke that his English was slightly tinged with foreign accent. That was natural enough, for his life since his youth had been passed abroad, and he had only come to England about a month ago.

"I can't tell you—story out of the beaten track, they say again. I shall be able to send you a stall if you care to go. You needn't sit it out if you're too much bored."

Wilmot Leslie was already a favorite with the men who knew him. In this topsy-turvy world it often happens the least worthy people are the most attractive.

"Thanks," Leslie answered, "I shall be much pleased to go. A trial matinee is something of a novelty to me, you know. One doesn't have them abroad."

"No, thank Heaven!" groaned the actor-manager, and Leslie laughed, but his laugh was not mirthful.

It would not strike him that he was a happy man. Perhaps like a good many, he was trying to live down his conscience. Some one suggested cards, and a move was made to the card

room. There Leslie proved a "plunger," but he generally won, and a keen observer of human nature might have noticed that there was something fictitious in his excitement—as if he were keeping up the stream, as it were, to prevent his "inner self" asserting itself. At three in the morning he walked through the growing dawn to his chambers, but the ghosts that flitted along by his side all the way followed him in and kept their silent watch—ghosts of evil deeds and misspent hours. There was one ghost that came nearer to him than the others and looked at him with eyes full of unutterable pain and sorrow. He covered his face, but he saw these eyes all the same. He called himself a fool and cursed his "nervous mood," but the spectres never stirred, and the sad eyes grew sadder—that was all.

"I'll have done with it all!" he cried, with a reckless laugh. "I'm getting sentimental. Puff! I'll settle accounts with a six-shooter if I can't get rid of these fancies any other way. It's too late to hark back."

The day of the matinee came. The play was called "Opal," from the legend of that beautiful stone that it grows bright while the love of the wearer for the giver burns clear and strong, and grows dim when love falters and fails. Leslie's stall was in the last row, and he knew none of the people near him. His acquaintances in England were, at present, not many. He looked carelessly over his programme and bit his lips for a moment, with a quick drawn breath; his tongue almost whispered the name of the heroine, Margaret. But the name is common enough. He listened to the chatter of the people about him—mostly professionals—not because it had any interest for him, but because he hailed anything that took his attention away from retrospection—anything that drove the ghosts a little farther away.

The curtain rose; the play began. Leslie listened at first with the languid indifference of the blasé playgoer. By-and-by he became interested; he watched and listened intently; he held his breath when the hero flung his wife from him and went out. It was the close of the act, and the people in front applauded, all except Wilmot Leslie. He did not stir.

In the second act the interest deepened; the man in the stall, with the handsome, reckless face was enthralled. The fellow in the play was haunted; so was he—Wilmot Leslie. He scarcely heard the applause. He never lifted a hand—how could he? For this was not a play, it was reality. Margaret loves her husband through all—through unfaith and desertion and all his piled up sins against her. Bah! It was a play; a woman's sentimental notions. Let the author be tried. She would not keep the opal bright. The man wasn't worth one tear of hers. Let him be cast out and be forgotten, as he deserved.

And now came the third and last act, where the husband is prevented from committing the crime he meditates, and in the end, in a beautifully written scene—which alone, said the critics afterward, ought to make the fortune of the play—Margaret forgives the man who has so bitterly wronged her. Wilmot Leslie, white as death—yet otherwise masking, for pride's sake, the agony in his heart—listened to the words, every one of which stabbed him with mortal blows. A play—yes, only a play—but, oh, that there could be for his wasted, sinful life such a last act as this!

The curtain was down and the house applauding and calling for the author. Wilmot Leslie, eager to see the woman who could write like this, lingered and presently Mrs. Clavering appeared at the wing to bow her thanks. The face flashed for a second upon Leslie's startled gaze; the next his eyes were blinded by a scarlet mist, he saw nothing, heard nothing, knew nothing. He groped his way out of the lobby. Some one spoke to him. He gave no answer. He had not heard. He reached his own rooms—going on through the streets in the same dazed manner—and there he flung himself

down, with a great and exceedingly bitter cry.

"Margaret, Margaret!"

\* \* \* \* \*

"A gentleman, ma'am, asks to see you."

"What name, Janet?" said Alix Clavering, putting aside a pile of morning papers, all of which more or less praised the new play, though some said that Margaret's love was too nearly divine to be possible in real life.

"He said that you would not know it, ma'am. He would not detain you long."

"Still I suppose he has a name. Well, show him up."

The servant retired, and in a minute opened the door again. A tall man came in, just a step beyond the threshold, and paused there, the door closing behind him.

Mrs. Clavering rose to her feet, trembling, paling, and they stood face to face—after seven years—husband and wife. Seventy times seven years of wrong between them.

The man spoke first, his head bent, his voice hoarse and broken, the sentences falling from his lips in disjointed fragments.

"I have been in England for a month past. I did not know that you called yourself Clavering. No matter—I should not have troubled you, only—" He paused. It might have helped him had he seen her face, but he did not see it; he dared not raise his eyes to hers. He went on, with an effort, "I saw your play yesterday, and saw—you—The woman—Margaret—that was not you? Only—a beautiful play—isn't that it?"

"No," she said slowly. She did not move but clasped her hands tightly over her laboring heart. "The woman Margaret is my heart. She loved him all through—though his sins were scarlet, he was her husband! And he had loved her once! So when he came back to her, casting all the evil years behind him, she forgave!"

"No, no!" the man cried, trembling in every limb. "She could not forgive such wrong! The message was not for me. Margaret; it was only a play!"

"It was deep calling unto deep," she said. She stretched out her hands towards him, and he looked up and saw the light in her eyes. He staggered forward, with a broken cry, and fell down at her feet, and she laid her arms about his neck and drew his head against her.

"My husband!" she said.—Waverly Magazine.

## Secret of a Long Life.

You sometimes see a woman whose old age is as exquisite as was the perfect bloom of her youth, says the Pittsburg Dispatch. You wonder how this has come about. You wonder how it is that her life has been a long and happy one. Here are some of the reasons:

She knew how to forget disagreeable things.

She kept her nerves well in hand, and inflicted them on no one.

She mastered the art of saying pleasant things.

She did not expect too much from her friends.

She made whatever work that came to her congenial.

She retained her illusions, and did not believe all the world wicked and unkind.

She relieved the miserable and sympathized with the sorrowful.

She never forgot that kind words and a smile cost nothing, but are priceless treasures to the discouraged.

She did unto others as she would be done by, and now that old age has come to her, and there is a hallow of white hair about her head, she is loved and considered. This is the secret of a long life and a happy one.

"Why, there's nothing wrong with your vermiform appendix," remarked the surgeon after he had performed the operation.

"Nothing at all, doctor," murmured the patient, "nothing but the name of it, and you might as well cut that out."—Detroit Journal.



## The Bee Hums in the Meadows.

I'm gittin' weary, Molly, of our visit here in town,  
Though daughter's done her very best to keep homesickness down.  
With sixty years spent on the farm, the town don't seem to be,  
For all its gayety an' sich, the fittest place for me.  
It's true the girls is married an' the boys is gone away,  
An' home is sorter like ourselves—a bit run down an' gray,  
But still I want to git back there whar' life flows slow an' sweet,  
With bee hums in the meadows an' the partridge in the wheat.

I've read the volumes, Molly, my daughter's had me read;  
I've gone about the city twice an' all its sights I've seen;  
But—will you b'lieve it!—lookin' down there on the cold and slush,  
There comes a flood o' memories an' a sort o' solemn hush.  
I see the children rompin' round the premises once more,  
An' sproutin' jonquills in the yard an' roses by the door—  
An' then I somehow hear 'twixt me an' noises of the street,  
The bee hums in the meadows an' the partridge in the wheat.

—Will T. Hale.

## His Memory was Good.

Mr. S. wanted to move from the city to a small town near by, in which there were but one or two stores. He would be in the city every day and agreed to purchase the "few little things" his wife could not buy in the village stores.

"You'd better put them down on a piece of paper," said Mrs. S. when about to give her first order.

"Oh, no," said Mr. S. "My memory is good."

"Well, then," began Mrs. S., "a spool of 60 black thread."

"Yes," said Mr. S.

"A yard of not too light and not too dark calico."

"Yes."

"A small hammer, a can of peaches, a dozen small pearl buttons, two yards of cardinal ribbon, silk on one side and satin on the other."

"Yes," said Mr. S. thoughtfully.

"A pair of slippers for baby, a dozen lemons, a good toothbrush, a pineapple, two ounces of sky-blue yarn, an ounce vial of homeopathic nux vomica pellets, a—"

"Wait a second," said Mr. S., counting on his fingers and looking perplexed.

"And a bottle of vanilla extract, and a yard of triple box-plaited crepe-lisse rushing, and three yards of small checked nainsook, and—"

But Mr. S. had seized his hat and was running for the station.

What the poor man brought home was: A yard of bedticking, three yards of black crape, a bottle of vinegar, eight yards of nankeen, a scrubbing brush, a pound of green yarn, sixty spools of "coat thread," a yard of very light and a yard of very dark calico and a pint bottle of homeopathic pills.

"There, my dear," he said triumphantly, throwing down his numerous packages, "I don't think you'll find a thing missing. Who says a man can't do shopping? My memory never played me false yet."—Buffalo Enquirer.

"George," said Mrs. Ferguson, "for heaven's sake straighten up. You're worse hump-shouldered than ever."

"Laura," retorted Mr. Ferguson, "be satisfied with having married me to reform me. When you try to re-shape me you are undertaking too much."—Chicago Tribune.

"SUPPOSE, Bobbie, that another boy should strike your right cheek," asked the Sunday-school teacher, "what would you do?" "Give him the other cheek to strike," said Bobbie. "That's right," said the teacher. "Yessum," said Bobbie, "and if he struck that I'd paralyze him."—Tit-Bits.

LITTLE JOHNNIE: "Paw, crows go south fer th' winter, don't they?" Parent: "Naw, they go south for th' summer; they kin git all th' winter they want up north."—Ohio Journal.

## DOMESTIC ECONOMY.

## Domestic Hints.

**CELERY SOUP.**—To one-half pint of strong beef tea add an equal quantity of boiled milk, thickened slightly but evenly. Boil twenty minutes, with the white stalks of a bunch of celery. Add butter, salt and pepper. Strain before serving.

**VEAL CROQUETTES.**—Chop cold veal fine; season highly with salt, pepper, cayenne, onion juice, celery salt and parsley. Moisten with beaten egg and white sauce. Shape into rolls. Roll in fine breadcrumbs, egg and crumbs again, and fry in smoking hot fat.

**VEGETABLE HASH.**—Chop equal parts of boiled vegetables, such as potatoes, beets, carrots, onions, parsnips, etc. Mix well together. Put slices of salt pork in a frying pan, and when well cooked take them out and chop fine; add to the hash. Turn the hash into the pan in which the pork was fried and cook until very hot. Turn out on a hot platter and garnish with parsley.

**FARINA CUPS.**—Make a syrup of one pint orange juice, two cups sugar, one cup water, rind of half an orange, juice of one lemon, and sufficient liquid to make one quart of whole. Bring to a boil and add gradually one cup farina. Cook for ten minutes, stirring constantly. Fill cups or punch glasses previously wet with cold water. When hardened and ready to serve turn out, and garnish with whipped cream and fruit. Strawberries, cut peaches or almost any fruit may be used.

**CREAM CHICKEN SOUP.**—Three to four pounds of fowl, three quarts of cold water, one tablespoonful of salt, six peppercorns, one tablespoonful of chopped onion, two tablespoonfuls of chopped celery; strain; when cool, remove the fat. For one quart of stock allow one pint of cream or milk. Boil the stock, add one tablespoonful of butter and one tablespoonful of cornstarch, cooked together; one teaspoonful of salt and one saltspoonful of white pepper. Have two eggs well beaten in a tureen, and strain soup over them. Serve at once.

## Hints to Housekeepers.

The unsightly yellow spots left by machine oil on white goods can be removed by rubbing them with a cloth dipped in ammonia, then washing with soap and water. Kerosene will remove the gummy substance which forms on sewing machines.

When the tops of loaves of bread are burned, instead of cutting off the burnt portion, when perfectly cold remove the burnt part with a coarse grater, brush away the crumbs, and cover the top of the loaf with a soft cloth wrung very dry from warm water.

To make soap for washing blankets shave fine two pounds of good white soap, and put into a saucepan, with two quarts of boiling water. Keep on the fire until the soap is dissolved, stirring occasionally. Add four ounces of borax, stir well, and the soap is ready for use. Never use brown soap when washing woolen goods.

Sugared popcorn and honeyed popcorn are among the harmless home-made sweets. For the former, boil together one cupful of sugar, one tablespoonful of butter and three tablespoonfuls of water until candied. Into this pour the popcorn and stir briskly until the corn is well coated. A little vanilla may be added if liked.

Before wetting any sort of bric-a-brac, and especially bronzes, remove all the dust possible. The less dust water finds about the lines and crannies the less it can leave there. After dusting wash well in strong white soapsuds and ammonia, rinse clean, polish with just a suspicion of oil and rotten stone, and rub off afterward every trace of the oil. Never let acid touch a bronze surface unless to eat and pit it for antique effects.

For internal and external applications we have found Perry Davis' Painkiller of great value and we can recommend it for colds, rheumatism or fresh wounds and bruises.—Christian Era. Avoid substitutes.

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COLD WITH R. Hall's Pulmonary Balsam.

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Glenn County, :::: California  
**FOR SALE**  
In Subdivisions.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

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66 Acres, Skagit Co., Wash. No buildings. Some timber on land. Partly fenced 2 1/2 miles to R. R. \$1,000.

140 Acres, San Diego Co., Cal. Some timber on land. Fair buildings. Spring. Very desirable for bee ranch. 18 miles to R. R. \$2,250.

218 Acres, San Diego Co., Cal. Good buildings. Springs on land. 3 acres in oranges. 1/4 fenced. 15 miles to R. R. \$1,250.

60 Acres, San Diego Co., Cal. Fair buildings. Good well. Located in fruit growing district. 1 mile to R. R. \$1,100.

165 Acres, San Diego Co., Cal. No buildings of any account. Good location. 12 miles to R. R. \$800.

153 Acres, San Diego Co., Cal. Good buildings. Some fruit. Located in one of the best agricultural sections. 5 miles to R. R. \$2,500.

305 Acres, San Diego Co., Cal. Good buildings. Cultivated grove on place. Orchard. All fenced. Good well. 1/4 mile to R. R. \$6,750.

140 Acres, San Diego Co., Cal. Buildings not much account. Excellent grain land. 30 miles to R. R. \$1,000.

160 Acres, San Diego Co., Cal. Good buildings. 1 acre orchard. Stream on land. Well adapted for stock raising. 5 miles to R. R. \$1,100.

20 Acres, San Diego Co., Cal. Good buildings. Soil suitable for all kinds of fruit. 2 miles to R. R. \$1,500.

160 Acres of land, Fresno Co., Cal. No buildings. Located in the oil belt. 6 miles to R. R. \$1,600. W. M. OSTRANDER,

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## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, March 26, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July
Wednesday.....	74 3/4 @ 75 1/4	75 1/4 @ 75 3/4
Thursday.....	73 3/4 @ 74 1/4	74 1/4 @ 75
Friday.....	74 1/4 @ 75 1/4	75 @ 74 3/4
Saturday.....	73 @ 71 1/4	74 @ 72 1/4
Monday.....	71 1/4 @ 72 1/4	72 1/4 @ 73 1/4
Tuesday.....	71 1/4 @ 72 1/4	72 1/4 @ 73 1/4

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May.	July
Wednesday.....	43 1/4 @ 44 1/4	35 1/4 @ 36 1/4
Thursday.....	43 1/4 @ 44 1/4	35 @ 35 1/4
Friday.....	43 1/4 @ 44 1/4	35 1/4 @ 35
Saturday.....	42 1/4 @ 43 1/4	34 1/4 @ 34 1/2
Monday.....	41 @ 42 1/4	33 1/4 @ 34 1/4
Tuesday.....	41 1/4 @ 42 1/4	33 1/4 @ 34 1/4

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 11 1/4 @ —	1 07 1/4 @ 1 08 1/4
Friday.....	1 10 3/4 @ —	1 08 1/4 @ 1 08
Saturday.....	1 09 1/4 @ 1 10	1 07 1/4 @ 1 07 1/2
Monday.....	— @ —	1 07 1/4 @ 1 07 1/2
Tuesday.....	1 09 1/4 @ 1 08 1/2	1 07 1/4 @ —
Wednesday.....	1 09 1/4 @ 1 09 1/2	1 07 1/4 @ 1 08 1/2

## WHEAT.

The market for wheat has been tending against the selling interest most of the week under review, especially in the Eastern speculative arena, where the existing powers have seen fit to cut down prices materially on future deliveries. Values in the East, however, have been and still are on a higher plane than here, admitting of paring down prices there and thus leaving more profit to the grower than has been afforded to the average producer on this coast by the best figures obtainable the current season. While the local market has naturally ruled weak, in sympathy with the East, there has been no pronounced decline here in spot values. The recent sharp reductions in ocean freight rates have aided materially in preventing wheat values declining to any marked degree. Ocean freight rates are now about \$3 per ton lower than a year ago. The Liverpool market is practically the same as at this date last year. Freight charges by sea are computed on a long ton, instead of 2,000 lbs., so spot wheat is bringing very close to the difference between carrying charges last year and now, although many of the ships in the present fleet are receiving above current rates, having been chartered early in the season. Shipping wheat is bringing in the local market about 12 1/2c per cental more than at corresponding date last year, which is \$2.80 per long ton. Ocean freight rates are down to 22s for large carriers, which is a low figure. The wheat market at close showed more firmness, owing to improvement East.

California Milling.....	1 12 1/4 @ 1 15
Cal. No. 1 shipping, alongside.....	1 10 @ 1 12 1/4
Oregon Valley.....	1 10 @ 1 12 1/4
Washington Blue Stem.....	1 10 @ 1 15
Washington Club.....	1 07 1/4 @ 1 10
Off qualities wheat.....	1 15 @ 1 07 1/4

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	68 3/4 @ 68 1/4	68 3/4 @ 68 3/4
Freight rates.....	36 1/4 @ 37 1/4	29 1/4 @ 33 1/4
Local market.....	97 1/4 @ 1 00	1 10 @ 1 12 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.11 1/4 @ 1.08 1/2.
December, 1902, delivery, \$1.07 1/4 @ 1.08 1/2.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.07 1/4 @ 1.08 1/2; May, 1902, \$1.09 1/4 @ 1.08 1/2.

## FLOUR.

Market has continued in much the same groove as for some weeks preceding. Offerings have not been heavy, but there is more than enough to accommodate the existing demand, and there is sufficient competition among sellers to keep the market favorable to the buying interest, most of the flour changing hands in a wholesale way being at lower figures than warranted by cost of production.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 35 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

## BARLEY.

Market for this cereal has not been noteworthy for activity or firmness the past week, but values have been maintained close to the figures last quoted. There have been no heavy offerings of any description, and it was the exception where buyers were able to secure material concessions in their favor, holders as a rule preferring carrying rather than accept less than full current rates. Present offerings do not include much Chevalier, stocks of this variety having been greatly reduced by recent shipments to Australia.

Feed, No. 1 to choice.....	95 @ —
Feed, fair to good.....	90 @ 92 1/2
Brewing, No. 1 to choice.....	97 1/4 @ 1 00
Chevalier, No. 1 to choice.....	1 10 @ 1 20
Chevalier, poor to fair.....	92 1/4 @ 1 05

## OATS.

There is no great movement in oats, prices being on too high a plane for buyers to take hold freely. Stocks are not very heavy, however, and are largely in second hands, having been purchased mainly at figures in keeping with those at present generally asked. The local consumption of this cereal is now light, and this must prove to be the case so long as values are maintained at or near existing levels.

White Oats, fancy feed.....	1 40 @ 1 45
White, good to choice.....	1 35 @ 1 40
White, poor to fair.....	1 27 1/4 @ 1 32 1/2
Gray, common to choice.....	1 27 1/4 @ 1 35
Milling.....	1 37 1/4 @ 1 42 1/2
Surprise, good to choice.....	1 45 @ 1 50
Black Russian.....	1 15 @ 1 32 1/2
Red.....	1 22 1/4 @ 1 40

## CORN.

Market has developed no changes of consequence since date of last report, either in general tone or in quotable rates. Offerings continue of moderate volume, and desirable qualities are being in most instances very steadily held. Demand at full current figures, however, is not brisk.

Large White, good to choice.....	1 35 @ 1 45
Large Yellow.....	1 35 @ 1 45
Small Yellow.....	1 45 @ 1 50

## RYE.

Recent shipments to Belgium have made heavy inroads on stocks, but there is still enough for all probable local requirements. Market is quiet and values are fairly steady.

Good to choice.....	92 1/4 @ 95
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## BUCKWHEAT.

Local millers are fairly supplied, and are not eager to operate, except at prices in their favor.

Good to choice.....	1 55 @ 1 70
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## BEANS.

No great amount of business is observable in beans of any description. The market, as a whole presents an easy tone, but values for the present are being better maintained on colored varieties than on white beans of most kinds, especially on Lady Washington and Small Whites. Pea beans are in such light stock as to be hardly quotable, very few growers having given this variety any attention the past few seasons. Market for Limas is ruling quiet at the reduced quotations noted, but spot supplies of same are of moderate volume. Stocks of colored beans are not large and are particularly light of Red Kidneys. Black-eyes are also offered very sparingly.

Pea, fair to good, 100 lbs.....	3 25 @ 3 50
Small White, good to choice.....	2 85 @ 3 00
Lady Washington.....	2 60 @ 2 75
Pinks.....	1 95 @ 2 20
Bayos, good to choice.....	2 50 @ 2 65
Reds.....	2 00 @ 3 00
Red Kidney.....	4 00 @ 4 50
Limas, good to choice.....	4 15 @ 4 25
Black-eye Beans.....	4 25 @ 4 50
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

## DRIED PEAS.

There are more on market than immediate custom can be found for at anything near full current figures, but more especially of the green or blue variety. Some Japanese planted very heavily of this kind the past season, causing the present glut.

Green Peas, California.....	1 50 @ 2 00
Niles Peas.....	1 75 @ 1 80

## WOOL.

Arrivals are on the increase, and stocks in local warehouses hid fair to be soon of quite respectable proportions, warranting wholesale operators in taking hold. No transfers of consequence have been yet effected here in this year's clip, but some noteworthy business is looked for at an early day. Market shows a firm tone. Values for new wool will probably be sufficiently defined the coming week to enable giving more extended quotations.

## SPRING.

Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	12 @ 14

## HOPS.

The local market is quiet, with jobbers quoting 13 @ 17 1/2c, which range is more in keeping with jobbing prices than with wholesale values. It is doubtful if over 15c could be realized here in a wholesale way for the most select. Certainly no higher figure is warranted as a wholesale quotation. The Eastern market is quoted at 14 1/2 @ 18c, with business of a very light order. Some contracting of Pacific Coast hops of coming crop is reported at 10 @ 11 1/2c, the latter figure mainly for choice Oregon.

## HAY AND STRAW.

The weak tone noted as existing in the hay market for nearly all descriptions at date of last review has since continued. There has been a glut of arrivals of stable hay, the good crop prospects causing many holders to crowd stocks to sale much faster than the demand warranted. That there will be decreased offerings and a steadier market in the near future is considered probable. Alfalfa hay has not been arriving in very heavy quantity, and in consequence values for the same have been better maintained than for most other kinds.

Wheat, good to choice.....	9 00 @ 11 50
Wheat and Oat.....	9 00 @ 11 00
Tame Oat.....	8 50 @ 10 50
Wild Oat.....	8 00 @ 9 50
Barley and Oat.....	8 00 @ 10 00
Alfalfa.....	9 00 @ 11 00
Clover.....	7 00 @ 8 50
Compressed.....	9 00 @ 11 50
Straw, 3/4 bale.....	40 @ 55

## MILLSTUFFS.

Bran was in decreased receipt and was more firmly held. Values for other mill offal were fairly steady. Market for Rolled Barley and Milled Corn was without noteworthy change.

Bran, 3/4 ton.....	15 00 @ 16 00
Middlings.....	18 00 @ 20 00
Shorts, Oregon.....	16 00 @ 17 00
Barley, Rolled.....	20 00 @ 21 00
Cornmeal.....	29 00 @ 30 00
Cracked Corn.....	30 00 @ 31 00

## SEEDS.

Alfalfa is in light supply, but not much inquiry is now being made for same; values remain nominally as last noted, quotations being based on the views of holders. Mustard is practically out of stock. Nothing of consequence doing in Flax. Prices for Bird Seed are quotably unchanged and business of light volume.

	Per ctt.
Alfalfa, Cal.....	9 50 @ 10 00
Alfalfa, Utah.....	10 50 @ 11 00
Flax.....	2 40 @ 2 60
Mustard, Yellow.....	— @ —
Mustard, Trieste.....	— @ —

	Per lb.
Canary.....	3 1/4 @ 3 1/2
Rape.....	1 1/2 @ 2 1/4
Hemp.....	3 1/4 @ 3 1/2

## BAGS AND BAGGING.

The Grain Bag market is quiet, but firm. Dealers in most instances are making no special efforts to crowd stock to sale at present, expecting in the Summer months a more favorable opportunity to unload. Wool Sacks are receiving some attention; supplies are ample for existing requirements; prices are unchanged.

Calcutta Grain Bags, buyer June-July.....	6 1/2 @ 6 1/4
Calcutta Grain Bags, spot.....	6 @ 6 1/2
San Francisco Grain Bags, 22x36, spot.....	6 @ 6 1/2
San Quentin Bags, 3/4 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	8 1/2 @ —
Gunies.....	— @ —
Bean Bags.....	5 1/2 @ 5 1/4
Fruit Sacks, cotton, three sizes.....	5 1/4, 6, 6 1/4
Fruit Sacks, Jute.....	7 @ 7 1/2

## HIDES, PELTS AND TALLOW.

The Hide market is slow for Wet Salted and devoid of firmness. Previously quoted values for Dry Hides continue to be fairly well maintained. Business in Pelts is of fair proportions and at generally unchanged prices. Tallow is in moderate request and values steady.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10 1/4 @ —	9 @ —
Medium Steers, 48 to 56 lbs.....	9 @ —	7 1/2 @ —
Light Steers, under 48 lbs.....	8 @ —	6 1/2 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	7 1/2 @ —
Light Cow Hides, under 50 lbs.....	8 @ —	6 1/2 @ —
Stags.....	6 1/2 @ —	— @ —
Wet Salted Kip.....	8 @ —	6 1/2 @ —
Wet Salted Veal.....	9 @ —	7 1/2 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ —	14 @ —
Dry Kip and Veal, 11 to 16 lbs.....	14 @ —	12 @ —
Dry Calf, under 4 lbs.....	17 @ —	15 @ —
Salted Horse Hides, large.....	2 75 @ —	— @ —
Salted Horse Hides, medium.....	2 25 @ —	2 50 @ —
Salted Horse Hides, small.....	1 25 @ —	— @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, medium.....	1 50 @ —	— @ —
Dry Horse Hides, small.....	1 00 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 3/4 skin.....	80 @ 1 20	— @ —
Pelts, medium, 3/4 skin.....	65 @ 75	— @ —

Pelts, short wool, 3/4 skin.....	40 @ 60
Pelts, shearing, 3/4 skin.....	15 @ 30
Deer Skins, best summer.....	35 @ —
Deer Skins, good medium.....	— @ 30
Deer Skins, thin winter.....	— @ 20
Elk Hides.....	10 @ 12
Tallow, good quality.....	5 1/4 @ —
Tallow, No. 2.....	4 1/4 @ 4 1/2
Goat Skins, perfect.....	30 @ 37 1/2
Goat Skins, small.....	10 @ 20
Kid Skins.....	5 @ 10

## HONEY.

There are no heavy quantities offering, but spot supplies have lately shown moderate increase, as some apiarists have been forwarding stock which had been held off the market prior to the liberal rains of the past month. The positive demand is not very brisk, still it is the exception where undue pressure to realize is being exerted or where very radical concessions are granted buyers to effect prompt sales.

Extracted, White Liquid.....	5 @ —
Extracted, Light Amber.....	4 1/4 @ —
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	10 @ 12 1/2
Amber Comb.....	7 @ 10
Dark Comb.....	6 @ 7

## BEESWAX.

Market is lightly stocked and for desirable qualities is firm at quotably unchanged rates.

Good to choice, light, 3/4 lb.....	26 @ 28
Dark.....	24 @ 25

## LIVE STOCK AND MEATS.

Beef is in fair request at practically the same figures current for several weeks past, with market firm in tone. Mutton is not in excessive receipt, nor is it likely to be in the near future; quotable values are at same range as last noted. Lambs are still bringing very good figures. Choice Veal is being favored with a firm market. Hogs are meeting as a rule with prompt custom, current values being well maintained; choice medium and small are higher.

Beef, first quality, dressed, net 3/4 lb.....	7 @ 7 1/4
Beef, second quality.....	7 @ —
Beef, third quality.....	6 @ 6 1/4
Mutton—ewes, 8 1/2c; wethers.....	8 1/2 @ 9
Hogs, bard grain fed, 125 to 200 lbs.....	6 1/4 @ 6 1/2
Hogs, small, fat.....	6 1/4 @ 6 1/2
Hogs, large, bard, over 200 lbs.....	5 1/4 @ 5 1/2
Hogs, soft or acorn fed.....	5 @ —
Hogs, country dressed.....	6 1/4 @ 7
Veal, small, 3/4 lb.....	8 @ 9 1/4
Veal, large, 3/4 lb.....	8 @ 9
Lamb, spring, 3/4 lb.....	12 1/4 @ —

## POULTRY.

A very fair demand was experienced for most kinds of poultry and comparatively good prices were realized, both for young and old fowls in prime to choice condition. While preference was given to young stock, old fowls of desirable size and weight sold to fair advantage, largely due to recently advanced cost and consequently higher asking figures for Eastern. Arrivals of Ducks and Geese were quite light. Turkeys did not make much of a showing, nor were very many wanted. Old Pigeons ruled steady; choice young met with a firm market.

Turkeys, dressed, choice.....	15 @ 17
Turkeys, alive, Hens, 3/4 lb.....	15 @ 16
Turkeys, alive, Gobblers, 3/4 lb.....	14 @ 15
Hens, California, 3/4 dozen.....	5 00 @ 6 00
Roosters, old.....	4 50 @ 5 00
Roosters, young (full-grown).....	6 50 @ 7 50
Fryers.....	5 50 @ 6 00
Broilers, large.....	5 00 @ 5 50
Broilers, small to medium.....	3 00 @ 4 00
Ducks, old, 3/4 dozen.....	5 00 @ 6 00
Ducks, young, 3/4 dozen.....	7 00 @ 8 00
Geese, 3/4 pair.....	1 50 @ 1 75
Goslings, 3/4 pair.....	2 25 @ 2 50
Pigeons, old, 3/4 dozen.....	1 50 @ 1 75
Pigeons, young.....	2 75 @ 3 00

## BUTTER.

The market has continued on the down grade, with arrivals on the increase and buyers holding off as much as possible, anticipating still lower figures. There is no probability, however, of values receding to as low levels as last season. When choice to select fresh is readily obtainable at 18 @ 20c, it is likely that storing and packing will begin.

Creamery, extras, 3/4 lb.....	21 @ —
Creamery, firsts.....	20 @ —
Creamery, seconds.....	19 @ —
Dairy, select.....	20 @ —
Dairy, firsts.....	19 @ —
Dairy, seconds.....	18 @ —
Mixed store.....	16 @ 17
Creamery in tubs.....	— @ —
Pickled Roll, 3/4 lb.....	— @ —
Parkin, California, choice to select.....	— @ —
Parkin, common to fair.....	— @ —

## CHEESE.

Market is fairly stocked with domestic product, both new and old. Demand is only moderate and there is no special firmness. Much of the new cheese coming forward is being offered at concessions, to avoid loss in shrinkage and expense of carrying.

California, fancy fat, new.....	9 1/4 @ 10 1/4
California, good to choice.....	9 @ 10
California, fair to good.....	— @ 9
California, "Young Americas".....	9 @ 11



EGGS.

Large quantities are going into cold storage and at higher prices than ordinarily prevail during the packing season. At the inside figures now current the demand is greater than can be accommodated, although the aggregate of arrivals is large, as compared with previous seasons.

California, select, large, white and fresh. 16 @—  
California, select, irregular color & size. 14 @15  
California, good to choice store. 14 @15  
California, common to fair store. —@—  
Eastern, good to choice. —@—  
Cold Storage. —@—

VEGETABLES.

While prices for most kinds of fresh vegetables continued at a rather high range, the tendency was to easier figures, receipts being on the increase. Asparagus, Peas and Rhubarb were all lower, and will likely be still cheaper the coming week. String Beans were in light receipt and choice brought good prices. Onions were in increased supply and for other than most select the market was slow and weak. Thoroughly sound, hard and uncut Onions were in the main rather steadily held.

Asparagus, 1/2 lb. 5 @ 12  
Beans, String, 1/2 lb. 15 @ 20  
Beans, Wax, 1/2 lb. — @ —  
Cabbage, choice garden, 100 lbs. 50 @ —  
Cauliflower, per dozen. — @ —  
Cucumbers, Bay, 1 large box. — @ —  
Egg Plant, Los Angeles, 1/2 lb. 25 @ 30  
Garlic, 1/2 lb. 2 @ 2 1/2  
Mushrooms, 1/2 lb. — @ —  
Onions, Yellow Danver, 1 cental. 1 75 @ 2 25  
Peas, Sweet garden, 1/2 lb. 3 @ 5  
Peppers, Green, Los Angeles, 1/2 lb. 10 @ 15  
Peppers, Bell, 1/2 box. — @ —  
Rhubarb, 1/2 box. 75 @ 1 50  
Squash, Marrowfat, 1/2 ton. 12 00 @ 15 00  
Summer Squash, 1/2 box. 1 50 @ 1 75  
Tomatoes, Los Angeles, 1/2 box. 75 @ 1 25

POTATOES.

There were fairly liberal arrivals of potatoes from Oregon and Washington, but not many were received from California points. For choice to select Burbanks the market was about as favorable to the selling interest as preceding week, but common and defective qualities dragged badly, and when custom was found for latter sort, it was only at extremely low figures, most buyers refusing to take hold of this poor stock at any price. Early Rose were in moderate receipt from the North, to accommodate the existing demand for seed of this variety. New Potatoes are arriving in a small way from near-by points and are selling to fair advantage on local account. Sweetens from Merced were notably higher, with offerings and demand both of light proportions.

Burbanks, Salinas, 100 lbs. — @ —  
River Burbanks in sacks, 1 cental. 1 25 @ 1 40  
Petaluma and Tomales Burbanks. 1 40 @ 1 50  
Oregon Burbanks. 1 35 @ 1 75  
River Reds. 1 40 @ 1 50  
New Potatoes, 1/2 lb. 2 1/2 @ 3 1/2  
Sweetens, Merced, 1 cental. 1 70 @ 1 85

The Fruit Market.

FRESH FRUITS.

Apples out of cold storage are still offering in moderate quantity, with asking figures much the same as have been ruling for some weeks past, but consumers are not taking hold freely, and especially is inquiry limited for other than most select. Strawberries are being now daily expected. The recent cool weather has retarded ripening. This fruit will probably be on market in quotable quantity the coming week.

Apples, fancy, 4-1/2 lb. box. 2 00 @ 2 25  
Apples, good to choice, 50-lb. box. 1 25 @ 1 75  
Apples, common to fair, 50-lb. box. 75 @ 1 00

DRIED FRUITS.

In the market for dried and evaporated fruits little has been done since last review. With stocks of only moderate volume, and mostly in few hands, values in the main have ruled steady to firm. Eastern dealers are running their stocks down to lowest possible limit, as is ordinarily the case at this time of year, desiring to avoid carrying dried fruit supplies of any consequence into the summer months, owing to risk of damage and loss during the heated period. All advices from the East indicate that stocks of California fruits there are light, and handlers here are under the impression that Eastern dealers will find it necessary to enter this market and purchase in considerable quantities long before the summer closes or new fruit comes upon the market. No heavy demand will be required during the summer to clean up remaining supplies of last year's dried fruit. Prunes of 1900 crop are still seeking custom, mostly the smaller sizes, and for these the market is weak, with 120s and smaller quoted at 1 1/2 @ 1 3/4. Last year's prunes are ruling steady, under light offerings, mostly in few hands. Apples are in very slim supply and de-

cidedly against buyers. Choice to fancy pears are virtually out of market, present offerings being almost wholly of the common grade denominated "standard." Recent sales of pitted plums indicate a slightly easier market for this fruit. Peaches are being firmly held, three or four firms having the bulk of supplies.

EVAPORATED OR BLEACHED.

Apricots, Royal, choice, in sacks, 1/2 lb. 9 @ 10  
Apricots, Moorpark. 10 @ 12  
Apples, in 50-lb boxes, rings, pressed, 8 1/2 @ 9  
Apples, 50-lb boxes, rings, pressed, good to choice. 7 1/2 @ 8 1/2  
Nectarines, 1/2 lb. 5 1/2 @ 6 1/2  
Peaches, unpeeled, fancy. 8 @ 9  
Peaches, unpeeled, choice. 6 1/2 @ 7 1/2  
Peaches, peeled, in boxes. 12 @ 14  
Pears, halves, choice to fancy. 7 @ 10  
Plums, Red and Black, pitted. 5 @ 6  
Plums, White and Yellow. 5 @ 6  
Prunes, 4 sizes, in bags, 3 1/4 @ 3 3/4; 50-60s, 4 1/4 @ 4 3/4; 60-70s, 4 @ 4 1/4; 70-80s, 3 1/2 @ 3 3/4; 80-90s, 3 @ 3 1/2; 90-100s, 3 @ —; these figures for 1901 crop.

COMMON SUN-DRIED.

Apples, sliced. 4 @ 5  
Apples, quartered. 5 1/2 @ 5 3/4  
Peaches, unpeeled. 6 @ 6 1/2  
Pears, prime halves. 5 @ 5 1/2  
Plums, unpitted, 1/2 lb. 1 1/2 @ 2 1/2

RAISINS.

Trade continues of the same slim proportions as for several weeks past, and little else is to be expected at this date, especially with existing light stocks. The little business doing in loose Muscatels, which constitute the bulk of present holdings, is mainly at slightly lower figures than officially quoted. Present offerings of Thompson's Seedless are confined to small stocks of bleached. Market for unbleached Sultanias presents an easy tone, although holdings are not of heavy volume.

Following are the prices for 1901 crop in carload lots:  
Loose Muscatels— Per lb.  
4-crown. 6 1/4 @ —  
3-crown. 6 @ —  
2-crown. 5 1/2 @ —  
Seedless Muscatels. 5 1/4 @ —  
Seedless Sultanias. 5 1/4 @ —  
Thompson's Seedless, bleached. 9 @ 10  
Seeded—  
3-crown, 1-lb. carton. 7 1/2 @ 8  
2-crown, 1-lb. carton. 6 1/4 @ 6 1/2  
London Layers, 20-lb. boxes—  
2-crown. — @ —  
3-crown. — @ —

CITRUS FRUITS.

The cool weather of the current week has operated against the advantageous sale of oranges. The quotable range of values was without noteworthy change, but the movement was slow at full current figures. Stocks were fairly liberal, mainly Navels, but the proportion of offerings of choice to select was not large. While the Lemon market was quiet, it was moderately firm for high grade stock. Common qualities moved slowly at a low range of values. Limes were less firmly held than preceding week, with movement light.

Oranges—Navels, 1/2 box. 1 25 @ 2 75  
Mediterranean Sweet. 1 75 @ 2 50  
Tangerine, half box. 1 00 @ 1 50  
Seedlings, 1/2 box. 1 00 @ 1 75  
Lemons—California, select, 1/2 box. 2 25 @ 2 75  
California, good to choice. 1 50 @ 2 00  
California, common to fair. 75 @ 1 25  
Grape Fruit, 1/2 box. 1 25 @ 2 75  
Limes—Mexican, 1/2 box. 4 50 @ 5 00

NUTS.

Business in Almonds and Walnuts is of the veriest jobbing character, and at generally unchanged values. The market is not burdened with offerings of choice of either sort. The Peanut market shows steadiness; stocks are not heavy, but are sufficient for current needs.

California Almonds, shelled. 15 @ 18  
California Almonds, paper shell. 10 @ 13  
California Almonds, soft shell. 8 @ 10  
California Almonds, hard shell. 5 @ 6  
Cal. White Walnuts, No. 1 soft shell. 10 @ 11  
Cal. White Walnuts, No. 2 soft shell. 8 @ 9  
Cal. White Walnuts, No. 1 hard shell. 9 @ 10  
Cal. White Walnuts, No. 2 hard shell. 7 @ 8  
Peanuts, California, fair to prime. 4 1/2 @ 5 1/2  
Peanuts, Eastern, hand-picked. 5 1/2 @ 6  
Pine Nuts. 5 @ 6

WINE.

No changes of noteworthy importance have been developed in the wine market since date of last report. Dry wines of last year's vintage remain quotable at 22 @ 26c per gallon, wholesale, with no heavy quantities offering and the market tolerably firm in tone. The firmness existing, however, is mainly due to indifference of most holders about realizing immediately and lack of selling pressure, rather than to any urgent demand from large operators or disposition to purchase at full current figures. The movement outward is fair, both by sea and rail, mainly of blended wines.

THE hog on the farm is a money producer and will always be a source of revenue at any season of the year. Blooded Stock, Oxford, Pa., a monthly swine paper, is practical, up-to-date, and a leader in its class. A special offer is being made to our readers.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, 1/2 sacks. 77,442	5,097,599	4,704,381
Wheat, centals. 209,634	7,965,240	6,184,259
Barley, centals. 48,460	5,293,457	3,181,587
Oats, centals. 5,756	731,061	559,116
Corn, centals. 1,921	88,032	87,924
Rye, centals. 285	229,476	105,512
Beans, sacks. 7,640	620,852	525,745
Potatoes, sacks. 21,249	1,121,135	1,272,651
Onions, sacks. 2,475	171,397	150,405
Hay, tons. 3,244	112,575	127,485
Wool, bales. 577	44,840	25,665
Hops, bales. 70	8,615	7,327

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, 1/2 sacks. 12,988	3,665,886	2,765,738
Wheat, centals. 184,101	7,432,799	5,963,021
Barley, centals. 81,718	3,848,236	1,899,761
Oats, centals. 333	2,740	47,821
Corn, centals. 2,205	2,205	2,651
Beans, sacks. 2,624	23,110	11,543
Hay, bales. —	12,638	82,921
Wool, pounds. —	545,331	409,631
Hops, pounds. 18,635	490,177	532,727
Honey, cases. 200	5,962	1,695
Potatoes, pack's. 282	44,220	115,746

California Dried Fruit at New York.

NEW YORK, March 28.—Evaporated apples, common, 7 @ 8 1/2 c; prime wire tray, 9 1/4 @ 9 1/2 c; choice, 9 1/2 @ 10 c; fancy, 10 1/4 @ 11 c.  
California Dried Fruits.—Demand fair; offerings of most kinds light, and market firm at prevailing values.  
Prunes, 3 1/4 @ 7 c.  
Apricots, Royal, 10 @ 13 c; Moorpark, 11 @ 14 c.  
Peaches, unpeeled, 8 @ 10 c; peeled, 14 @ 18 c.

BLACKLEGNE.

With the opening of spring the usual danger from blackleg arises, though the disease has entirely lost its terrors to the stock raisers since the Pasteur Vaccine Company introduced vaccination in the spring of 1895, or over seven years ago. The success of vaccination when the Pasteur vaccine is used is too well known nowadays to need any comment. No doubt some stock raisers used to hesitate about vaccinating, on account of the trouble and expense in connection with the old powder vaccine with the syringe outfit. However, this was entirely removed by the introduction some years ago of Pasteur Company's "Blacklegine," which is simply the Pasteur blackleg vaccine in a form ready for use as sold. The only instrument required with this method is a special needle furnished with a handle, which only costs 50 cents, and, as each dose is separate, there is no waste. Blacklegine and the Blacklegine outfit render vaccination cheaper, simpler and more effective than ever. Blacklegine is furnished in single treatment for ordinary stock and in double treatment for choice stock. The Pasteur Vaccine Company is not only the pioneer for live stock vaccination, but has also kept abreast of the times by the improvements that it has introduced.

Caustic Balsam Cures Sweeney.

Norwalk, Cal., Sept. 20, 1901.  
The Lawrence-Williams Co., Cleveland, O.  
Please send me descriptive circular. Used GOMBAULT'S CAUSTIC BALSAM on a sweeney on fore shoulder of horse, that was so bad that a man's hand laid on it did not near fill it up even, and can't tell the horse ever had a sweeney now. Will the liniment cure a sweeney of several years' standing in an old horse? (Yes, L.-W. Co.)  
FRANK M. WARNER.

SAN FRANCISCO VETERINARY COLLEGE.

Next session will begin June 9th. Catalogues sent upon application. M. L. PANCOAST, Secretary, 510 Golden Gate Ave.

SUGAR PRUNE TREES.

1-year old 5 to 8 feet, extra fine, per 100 at \$10; 200 or more at \$9 per 100 f.o.b.  
APPLE TREES—2 years old, 5 to 7 feet, \$50 per 100; 300 at 1000 rates; 200 at \$5.50 per 100; 100, \$4; consisting of Ben Davis, Wine Sap, Yellow Bellflower, Rome Beauty, Baldwin, Jonathan, Maiden Blush, R. I. Greening, etc. All prices are f. c. b. Redlands. Also have small amounts of other stock.

GUARANTEE. We wish to mention, particularly to those residing in northern California, that we guarantee our trees to be in first-class order, as they have not started yet, being due in part to our having received them and to the season being later in southern California. If you will mention where or how our business was brought to your notice, we will allow you 10 cents on your bill and 25 cents if it amounts to 25 cents or over. Redlands Nursery, E. I. Martin, Prop., Redlands, Cal.



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NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION, a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 309 California Street, San Francisco, at 10 o'clock A. M., Wednesday, the 9th day of April, 1902.

I. C. STEELE, President.  
CHARLES WOOD, Secretary.

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SAN FRANCISCO, CAL.**CEREAL CROPS.**

The Wheat Growers' Convention.

We gave last week the names of the directors to which the Grain Growers' Association has entrusted its future. There are some matters which arose during the convention which are interesting.

**TO BUY OR NOT TO BUY.**—After the election of directors the by-laws, which define the scope of the Association, were taken up. Mr. Garnett moved that the words "buy, sell," be omitted from the recapitulation of the objects of the Association.

Mr. Yokum explained that it was necessary to provide in the section enumerated the objects and powers of the Association for anything that it might be found advisable to do in carrying out its objects. The enumeration of its powers did not necessarily involve the carrying of them out. They should be made broad enough and long enough to command the respect of every business man in the State. The delegates were here to plan for the future and must build for the future by their action.

Mr. Garnett did not believe that the farmers would consent to go into the movement to put into the hands of eleven men the power to buy and sell grain. The farmers have been bitten before now. There should be no power other than to charter and ship. That is what the farmers have been told were the objects and he thought that power to buy and sell was too much. He had told them that the Association proposed only to manage the shipping of grain.

M. D. Ivory thought his people would not stand for buying and selling, as they had not contemplated it.

W. A. Van said he was one of the canvassers and had told the growers that they should confine themselves to the question of transportation alone, and that he hoped the time would never come when they would need to do more. He explained why the words were inserted. If they incorporated and the articles were not broad enough to take in all these things, the "big four" would interfere to restrain them. If it sees that the articles only empower the Association to do one thing it will try to tie it up so that it cannot accomplish anything. It ought to have several avenues of escape, although it may never have to use them, and the articles do not bind it to do so. It simply gives the Association a legal right under the laws of the State, so that it can do business. Otherwise, if it wants at some future time to do something not specific in the articles, it will have to go over all this matter of incorporation again. Did they not believe they could elect a board of directors who would not go into a wild cat scheme? Cannot the farmers trust themselves and their neighbors? There should be a separate contract for the signatures of the farmers. When the farmers have the matter explained to them he thought they would be no longer afraid of what is at present a bugaboo.

In answer to a question by Mr. Ivory,

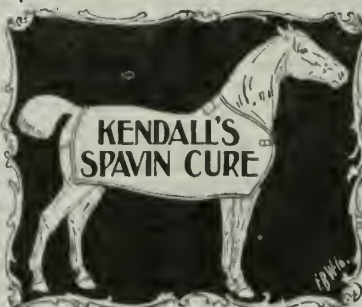
if the by-laws could be made eliminating this power, so that his people would indorse it, the chairman said the by-laws were simply adopted for the guidance of the Association. The contracts were entirely another thing. They must go before the farmers with the contracts, which have nothing to do with the by-laws.

If the articles of incorporation are limited to shipping, the Association can do nothing. It must have warehouses and facilities for getting the grain on board ship. He hoped it would never have to buy or sell or go into building warehouses, wharves or railroads, but it must be prepared for everything. It might be necessary to buy grain in order to hold the market and it might be necessary to sell grain that had been bought. The Association must be prepared to meet any emergency, and the board must have ample scope to do everything necessary. He had confidence in them, and if the Association goes down they will suffer with the other grain growers.

The amendment was lost and the articles of incorporation adopted unanimously.

**TO PROCEED.**—The directors were authorized to perfect the organization and file the articles of incorporation. Two forms of contract were read by the secretary for the information of the delegates.

Chairman Pierce explained that in each form the Association is given a certain interest in the crop to recoup it for handling it and insure the Association's having the transportation of it. The end sought is the same in both contracts, but the methods are different. By one form, if the freight should go up above the amount named, the grower would be the gainer. If it should go down he would lose a small

**\$100 EVERY YEAR.****Worth \$500 to this Man.**

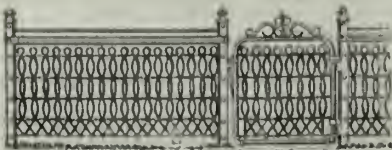
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amount. The one-tenth interest conveyed to the Association is to insure the carrying out of the contract. Without it, it could not enforce the performance of the contract. This form has been adopted by the raisin growers and the San Jose Cured Fruit Association. The grower who keeps fully his contract gets back the percentage transferred to the Association, less his proportion of the expenses of the Association.

A long discussion ensued as to the fixing of a rate of freight to be inserted in the contract, but it was decided to insert no limit of rate.

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may "throw a curb," "start a splint," "sprain a cord," "develop a spavin, thrush, or grease heel," etc. They are all bad, but don't be alarmed. Get a bottle or two of

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Per package of 15 doses, including needle..... 1 75  
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Actual Potash.

The value of Potash for oranges is an established fact. We have some interesting pamphlets on orange growing, which we send free to all applicants.

GERMAN KALI WORKS, 93 Nassau St., New York.

MEYER, WILSON & CO., San Francisco, Cal., are Sole Agents for the Pacific Coast.

A down-to-date CATALOGUE

Every horticulturist should have it. 40 pages of new information and details about

Citrus Trees

that grow and are true to name. These nurseries are headquarters for Citrus Trees.

We have pleased hundreds of others and have stock that will please you, therefore

WE WANT YOUR TRADE.

Remember! This valuable book is FREE. Send for it to-day.

R. M. TEAGUE, (Estab. 1890.) San Dimas, Los Angeles Co., Cal.

FERTILIZERS.

We carry the largest and most complete stock of Fertilizers on the coast.

Nitrate of Soda, Sulphate of Ammonia, Tankages, Fish Scrap, Steamed Bone Meal, Dissolved Bone Meal, Thomas' Phosphate Powder, Superphosphate, Double Superphosphate, Sulphate of Potash, Muriate of Potash, Kainit, etc., etc.

Also Mixed Fertilizers of every description. We guarantee all our goods. Get our prices before ordering.

N. OHLANDT & CO.,

Indiana and 24th Sts., San Francisco, Cal.

USE

Nitrate of Soda

FOR

Money Crops.

Sugar Beets, Oats, Wheat, Grass, Rye, Corn, Fruit.

You GET YOUR SHARE OF PROFIT when you use this ideal predigested Ammoniate as plant food.

For list of dealers, formulas and other valuable information, write

WILLIAM S. MYERS, Director, CHILEAN NITRATE WORKS, 12 John St., NEW YORK.

MAY'S SEEDS ARE BEST. L. L. May & Co., St. Paul, Minn.



## FRUIT MARKETING.

## Messina Lemons.

Special Consular Report to Pacific Commercial Museum.

The winter crop of lemons is about one-third larger than last year, and about 40% is still on the trees and is of poor quality owing to the weather conditions of November and December.

Everything points to a crisis, for the small demand from America is creating the greatest concern among the growers, who do not receive offers high enough to justify gathering, and no doubt the result will be that later on what remains will find its way to the essence and citrate of lime factories.

There are practically no orders now on the market, the last steamer only taking about 2000 boxes, most of which were ordered by cable. The prices paid are about 5 shillings, cost and freight New York. The freight remains at 1s 2d, with a drawback of a penny at the end of the season.

CHAS. M. CAUGHY, U. S. Consul.  
Messina, Italy, February 17, 1902.

## A SICILIAN REPORT ABOUT LEMONS.

Consul Heingartner writes from Catania, February 15, to the State Department as follows:

It is estimated that about 700,000 boxes of the winter crop of lemons remain for export. The quality of the fruit is considered good. Prices, however, are very low, varying from 3.50 lire (65 cents) to 5.50 lire (\$1.02) a box. A shipment of 300 boxes to the United States was made from this port a few days ago, the first within a year. The freight was 30.4 cents a box.

The following is a translation of a press dispatch, dated Rome, February 10:

All the reports from the Italian representatives in the United States of America agree in confirming that this year the fruit crop in the United States will be very limited. It is hoped, therefore, that Sicilian fruits will find an easy outlet in America.

## Experimental Shipments of Apples to China.

Hon. H. B. Miller, United States Consul at Niu Chwang, Manchuria, in a letter to the Oregon State Board of Horticulture, reports the results of an experimental shipment of apples made by him to China. He says:

"On September 28 I shipped five boxes of apples from Portland to Niu Chwang, China, via the Portland & Oriental Steamship Company. These were transferred at Kobe, Japan, to another steamer bound for Niu Chwang, which place they reached November 10. They were wrapped in paper and packed in ordinary 10x11x22-inch boxes. Every box arrived intact.

The loss from deterioration was as follows:

	Loss.
Ben Davis.....	2%
Spitzenberg.....	10%
Shannon Pippin.....	25%
Jonathan.....	50%
Red Russian.....	75%

"I consider the Ben Davis the best apple for the Oriental trade. California ships third-grade yellow Newtowns to China. Some of these are consumed by foreigners, but most of them go to Chinese fruit stands and restaurants. These apples are usually immature, wilted and tasteless and would not be eaten at home. The Chinese appetite is strong for fresh fruit and apples are in great favor.

"A hundred millions of Chinese can be reached from the Pacific coast of America entirely by water transportation, at low freight rates. This is not fully appreciated or understood. Ben Davis, Yellow Newtown and Winesaps will carry well to these markets. Baldwin, Spitzenberg and Northern Spy will not succeed. Several thousand boxes of Ben Davis are shipped to China every year from Portland, Seattle and Victoria. The northern routes are the best for shipping green fruits. Apple shipments for all the northern

ports of China should be made by October 1, on account of the danger of freezing if they arrive late. If apples reach China in good condition, they will keep well on account of the dry, cold climate."

Month After Month a cold sticks, and seems to tear holes in your throat. Are you aware that even a stubborn and long-neglected cold is cured with Allen's Lung Balm? Cough and worry no longer.

## New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR WEEK ENDING MARCH 11, 1902.

- 695,263.—SASH FASTENER—W. R. Abrams, Portland, Or.  
695,135.—SAW SET—Baggs & Cummin, San Jose, Cal.  
695,136.—WATER HEATER—M. A. Baker, Stockton, Cal.  
695,200.—SEWING MACHINE—F. O. Berg, Spokane, Wash.  
694,939.—CAISSON—C. Blagburn, S. F.  
695,034.—BOILER CLEANER—J. H. Connolly, Clifton, Ariz.  
695,026.—BROILER—J. P. Falve, S. F.  
695,382.—HEATING ORCHARDS—C. Froude, Riverside, Cal.  
695,383.—MAGNETIC TRACTION—S. A. Gibbs, Tacoma, Wash.  
695,206.—ELECTRIC REHEATER—G. Griesche, Berkeley, Cal.  
695,047.—NUT WRENCH—W. F. Hamilton, Ventura, Cal.  
695,308.—LAMP HANGER—H. J. Harrison, Juneau, Alaska.  
694,971.—RECTAL INSTRUMENT—S. L. Kistler, Los Angeles, Cal.  
695,157.—BRONZING MACHINE—G. Klalber, Los Angeles, Cal.  
695,063.—MOP HEAD—J. C. Look, Tudor, Cal.  
695,064.—CONCENTRATOR—L. Look, Los Angeles, Cal.  
695,162.—CARPET CLEANER—A. Lotz, S. F.  
695,323.—CHUTE—W. L. McCauley, Tacoma, Wash.  
695,167.—MEASURE STERILIZER—J. C. F. McGriff, S. F.  
695,169.—CASING SPEAR—E. North, Los Angeles, Cal.  
695,076.—GRAVEL CRUSHER—C. H. Ohm, Shellville, Cal.  
694,984.—NEEDLE THREADER—A. Olson, San Diego, Cal.  
695,343.—ROUTING MACHINE—W. S. Richards, Albany, Or.  
695,416.—ROLL PAPER PRINTING—B. Ring, S. F.  
695,085.—SLUCE BOX—L. B. Tanner, Seattle, Wash.  
35,806.—DESIGN—Stetson & Thomas, S. F.

## Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

EXTENSION FOR CUTTER HEADS.—No. 694,060. Feb. 25, 1902. C. E. Hawley, Berkeley, Cal. This device relates to improvements in attachments for planing, grooving, matching and similarly actuated machines. It consists in the combination with a cutter-head of detachable blocks extending radially from said head so that a line substantially through the center of the blocks will intersect the axis of the head. Means are carried upon the blocks whereby the knife may be rigidly held and made to present its cutting edge in proper relation to the work. Plates or distance pieces are adapted to be interposed between the blocks and the head to increase the range of cut.

CANE LOADERS.—No. 694,548. March 4, 1902. A. Horner, Paaulo, Territory of Hawaii. This device is designed for loading cane upon wagons, railroad cars or other conveyers in the fields. It consists in combination of a derrick mounted on a wheeled platform, means by which the mast of the derrick may be mounted in an essentially vertical position irrespective of the nature of the ground, and an adjustable seat for the inner end of the boom whereby the boom with its load may be automatically moved to discharge at any desired point.

PROTECTING TREES.—No. 691,546. Jan. 21, 1902. T. J. Huhbell, Watsonville, Cal., assignor to D. Huhbell and W. H. Ames, same place. This invention comprises a method of protecting trees from the ravages of codlin moth and similar enemies of trees. It consists in applying a plastic substance to the trunk to form an even surface, then placing a soft annulus about the trunk proximate to the coated surface, and finally placing a flexible strip about the trunk and securing the upper edge just above the annulus, said strip having its surfaces coated with a viscous or glutinous substance.

HAY LOADING APPARATUS.—No. 691,659. Jan. 21, 1902. E. H. Nicholson, Santa Maria, Cal. This invention comprises a rake having a horizontal portion and an upwardly projecting rear portion. Tapes are fastened to the top of the rear portion and detachably secured to the forward end of a horizontal portion. A rake is moved along the ground until a load has been gathered upon it, and the detachable front ends of the ropes are then carried over the load, and by pulling upon the ropes the load is rolled from the rake up the incline and upon the wagon.

PIN FASTENER FOR SHOW CARDS.—No. 694,063. Feb. 25, 1902. L. Lemos, San Francisco, Cal. This invention is designed to attach show cards or price lists to goods and consists of a hook-shaped pin having a peculiarly constructed base and extended shank and a flexible fastener connected therewith. The pin has a transverse loop at its base and integral with it and a flattened extension at right angles with the loop with means for securing it rigidly to the card.

DOOR MATS.—No. 694,554. March 4, 1902. Charles Kuhn, Fruitvale, Cal. This door mat consists of a frame having a grill work of interlocking pattern, the edges of the parts serving as scrapers to cleanse loose dirt from the feet, and in conjunction with this is a detachable device by which the edge of the frame may be clamped upon the fibrous or flexible mat which is subsequently used to complete the cleaning of the shoes.

# Care<sup>nd</sup> Handling of Milk and Illustrated.

Number 1.

MANUFACTURE OF ITS PRODUCTS.

Of first importance following Careful Milking are

## Effectual Aeration & Perfect Straining,

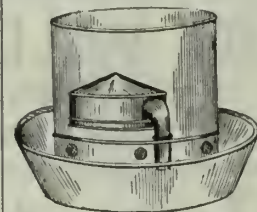
and both are most successfully accomplished by the use of apparatus comprising the

## WICKSON SYSTEM OF HANDLING MILK.

as described in this and following issues.



MILKING PAILS, soldered tight at every joint, outside as well as within—bottom as well as top. Our own careful make of heaviest stock. Something better than generally used. 20 qt., extra heavy, per doz., \$12.00; each, \$1.25

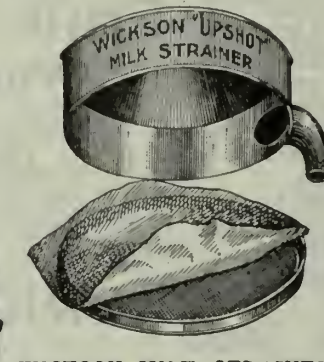
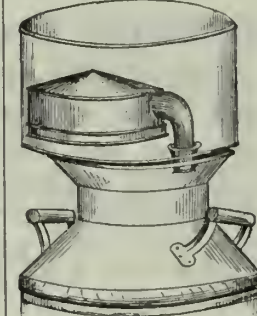


## Wickson Milk Aerator.

REMOVES ANIMAL AND FEED ODORS, and greatly improves the keeping quality.

Furnished complete as shown with Tanks and Strainer.

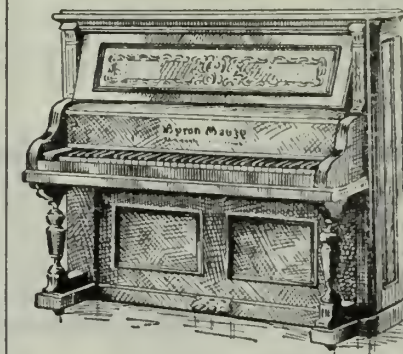
Outfit for 1 to 3 milkers, \$12. For 5 or more milkers, \$20



## WICKSON MILK STRAINER.

Dirt not forced through by dash of milk nor settles on and obstructs strainer. Dirt settles on bottom while milk rises UPWARD and freely through brass and cotton cloths which in this position will strain cleaner than any other construction. Easy to wash and durable.

G. G. WICKSON & CO., Designers and Manufacturers of 34 & 36 MAIN ST.,  
Modern Dairy and Creamery Apparatus. San Francisco.



Sohmer  
Byron Mauzy  
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PIANOS.

PIPE ORGANS.

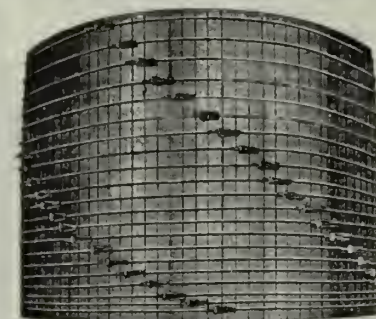
Byron Mauzy,

308-310-312 Post St., San Francisco.

WRITE TO OUR MAIL ORDER DEPARTMENT.

## OUR EXCELSIOR ADJUSTABLE ROUND-HOOP TANK

(Patented)



Costs no more, is easier to set up and is far superior to the old style flat-hoop tanks for any purpose. They need no water channe or perishable devices for keeping the staves wet. They are always tight. The hoops are of steel and tighten with a monkey wrench. They have an upset thread end 6 inches long. Each hoop has from 2 to 6 lugs or shoes, according to size of tank. Send for price list of stock sizes.

The Excelsior Redwood Co.

SOLE MANUFACTURERS.

Fourth and Channel Sts., SAN FRANCISCO.

C. A. HOOPER & CO., Agents,

204 FRONT STREET.....SAN FRANCISCO.

## The REID Hand Separator

is the closest skimmer, as well as the easiest running and most economical separator made.  
Very Simple and Durable.  
Capacity 150 to 500 lbs per hour. Prices \$60 to \$100.  
Hand separator circular and illustrated catalogue of dairy supplies free

A. H. REID  
30th and Market St.  
Philadelphia, Pa.



Send anywhere on 10 Days' Free Trial

## California Vegetables

IN Garden and Field.

By PROF. E. J. WICKSON.

A Practical Guide to Success in California. Large 8vo., fully illustrated.

PRICE \$2. Orders received at this office.



## Breeders' Directory.

### HORSES AND CATTLE.

**HOLSTEINS**—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr. old classes, except 1st on 2-yr. old in 1896. Last year every butter prize awarded won by my herd, except 2nd for 2-yr. olds, 21 Jerseys and Durhams competing. F. H. Burke, 30 Montgomery St., S. F.

**A. J. C. C. JERSEYS.** Service bulls of noted strains Joseph Maillard, San Geronimo, Marin Co., Cal.

**26 SHORT-HORNED DURHAM BULLS FOR SALE.** Also 25 grade Durham cows. Also 1 imported French draft stallion; color black, weight 1650 lbs. Address E. S. Driver, Antelope, Cal.

**JERSEYS, HOLSTEINS & DURHAMS.** Bred specially for use in Dairy. Thoroughbred Hogs, Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

**BULLS**—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

**PETER SAXE & SON,** Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

**J. H. GLIDE,** Sacramento, Cal. Have 70 choice Durham Bulls for sale.

**JERSEYS**—The best A. J. C. C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

### POULTRY.

**WELLINGTON'S IMPROVED EGG FOOD** for poultry. Every grocer and merchant keeps it.

**MAMMOTH WHITE PEKIN DUCK EGGS** \$1.00 per doz. W. H. Catlett, Pleasant Grove, Cal.

**EGGS** from prize-winning Buff, Brown and White Leghorns, Black Minorcas and Barred Ply. Rocks. \$1.50 per setting, \$5.00 per 100. S. P. Lindgren & Sons, Kingsburg, Cal.

**SANTA TERESA POULTRY FARM,** Eden Vale, Santa Clara Co., Cal. Illustrated catalogue with show record, free. Agents Eclipse Aluminum Leg Bands; sample 2 cts.

**WILLIAM NILES & CO.,** Los Angeles, Cal. Nearly all varieties chickens, geese, ducks, peafowl, etc.

**MEAT MEAL**—Best quality, lowest price. White Leghorn eggs. A. Warren Robinson, Napa, Cal.

**BRONZE TURKEYS.** Ed. Hart, Clements, Cal.

### SWINE.

**BERKSHIRE, POLAND-CHINA & DUROC HOGS.** Choice; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

**POLAND-CHINA BOARS.** C. A. Stowe, Stockton.

**FOR SALE.**—One registered Poland-China Boar and two Gilts 7 mos. old. Sutton Bros., Lodi, Cal.

**P. H. MURPHY,** Perkins, Sac. Co., Cal. Breeder of Shorthorn Cattle and Poland-China Hogs.

**ASHLEY BROS.,** Linden, San Joaquin Co., Cal. Breed Poland-China and Berkshire Hogs.

### BREEDERS' SUPPLIES.

**POULTRY** supplies of all kinds. Send for my new price list and booklet, "HOW TO FEED FOWLS FOR PROFIT," CROLEY, 508 Sacramento St., San Francisco, Cal.

**BETTER HATCHES** by new method of experienced pouter; no more spoiled sittings; saves your temper; directions 20 cts. Valley Poultry Farm, Helena, Mont.

### FOR SALE.

Two Thoroughbred Registered Jersey Cows, 3 years old, fresh, \$75.00 each or \$150.00 both. From Henry Pierce's Herd. E. S. GORDON, P. O. Box 13, Santa Rosa, Cal.

### Mongolian Pheasant Eggs FOR HATCHING.

Five Dollars (\$5) per Setting of Fifteen (15) Eggs. Can be hatched by a Bantam hen or by an incubator. Full directions for raising the young birds with each setting. Orders filled as received. Address MRS. L. DUGAN, Belmont, San Mateo Co., California.

### Duroc Hogs.

Thoroughbred; 20 Males, 20 Females, 4 Mos. Old. Will crate and put on board at Laws, Cal., C. & C. Ry. station, with feed for destination, for \$5 each, or \$30 per pair. Also, some 2 mos. old, Mar. 27th, at \$10 each, or \$20 per pair. These are desirable hogs, the famous Duroc breed being of superior value in many well-known respects. Address J. L. BOURLAND, Bishop, Inyo Co., Cal.

## Oakland Poultry Yards.

BREEDERS OF ALL THE LEADING VARIETIES OF FOWLS.



1317 Castro St. OAKLAND, CAL. Manufacturers of Pacific Incubator and Brooder.

Send for Catalogue. Publishers of the "Pacific Coast Poultryers' Hand-Book and Guide." Price 40c.

## Santa Rosa Stock Farm

Offers For Sale the following Well-bred Stallions:

**ON STANLEY 2:17** 1 Register No. 31051. 2 By Direct 2:05 1/4, sire of Directly 2:03 1/4 and 35 more in 2:30. Dam Lilly Stanley 2:17 1/4 (dam of Rokeye 2:13 1/4 and Rect 2:16 1/4) by Whippleton 1883.

**FRAM 2:17** 1 Register No. 0479. By Direct 2:05 1/4, sire of Directly 2:03 1/4 and 35 more in 2:30. Dam Silver Eye (dam of Raymon 2:17 1/4) by Abbottsford 2:19 1/4.

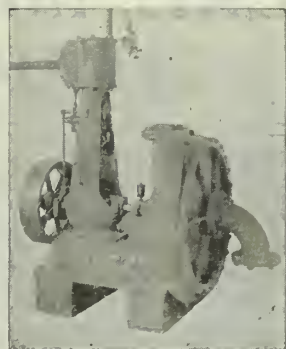
**INFERNA 2:24** 1 Register No. 30838. By 4 2:05 1/4, sire of Directly 2:03 1/4, sire of Clipper 2:06, Sir Albert S. 2:08 3/4, Diodine 2:10 1/4 and 15 more in 2:30. Dam Biscari by Director, 2:17, second dam Biscari (dam of 6 in 2:30 and 4 producing sons) by Harold.

**BEAU B. 2:16** 1 Register No. 32606. By 2 Wildnut, sire of Wild Nutting 2:11 1/4, El Rami 2:14 and others. Dam Nettie Benton (dam of 4 in the list) by Gen. Benton.

The above stallions are offered for sale at low prices. For terms, address

**H. & W. PIERCE,**  
728 Montgomery Street.

Or W. G. LAYNG, 721 Howard Street, San Francisco.



## KROGH CENTRIFUGAL PUMPS

for IRRIGATION, RECLAMATION and WATER WORKS.

Capacity up to 100,000 gallons per minute.

They are made Horizontal and Vertical and Direct Connected to Steam or Electric Power. Our Pumps have given the highest efficiencies ever recorded.

IN USE ALL OVER THE PACIFIC STATES.

**KROGH MFG. CO.,**

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## MIDLAND FEED. THE ONLY BALANCED RATION FOR POULTRY IN THE WORLD.

TEN BRANDS—Each for a specific purpose. Each one complete in itself—NO ACCESSORIES.

Intelligent Feeding of Poultry always returns a profit. Improper feeding does not. It costs no more to feed right than wrong. The nutritive ration must be balanced to meet specific requirements. Our booklet, "The Science of Poultry Feeding," tells you all about it. We will also send you, on request, our booklet "Poultry Fattening Perfected," which describes our new Poultry Crumming Machine and method of use; also trough feeding, and our special brand of Grenadier Meal; the only Perfect Feed on earth for this purpose sold under a specific guarantee. Write for them at once and get posted. THE PETALUMA INCUBATOR CO., Pacific Coast Agents, PETALUMA, CAL.

## Emery's Method of Feeding Poultry for Flesh and Eggs.

BOOKLET FREE IN REPLY TO A POSTAL.

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## HOLSTEIN CATTLE.

SLEEPY HOLLOW RANCH, SAN ANSELMO, MARIN CO., CAL. ALL THE LEADING FAMILIES OF THE BREED.

Every Sire directly imported from Herds of the Greatest Eastern Breeders.

Large Number of Officially Tested Cows. Bull Calves from Great Producing Dams.

Correspondence and personal inspection invited. R. M. HOTALING, 431 Jackson St., San Francisco.

## WE HAVE SOLD

the bred sows lately advertised, but we have BERKSHIRES of both sexes from October and November litters sired by BARON LYNWOOD, LYNWOOD MODEL, and imported LUSTRE'S BACHELOR II, and out of fine Eastern bred sows.

In POLAND-CHINAS we have a number of pigs from July, August, October and November litters. They were sired by sons of the most noted Eastern boars and out of well bred sows.

Secure the pigs you will need so as to have them ready when wanted. Write us for what you want and we will quote prices.

Lynwood Dairy and Stock Farm.

SESSIONS & CO., 117 E. 23rd St., Los Angeles, Cal.

**HUMBOLDT STOCK FARM,**  
JOSEPH MARZEN, PROPRIETOR.  
Breeder of SHORTHORN AND HEREFORD CATTLE.  
Young Stock for Sale. LOVELOCK, NEVADA.

DEWEY, STRONG & CO., Patent Solicitors, 330 Market St., San Francisco, Cal.

## LAWES' CHEMICAL CO., Ltd.

London, Eng. Established 60 Years in Business.



Manufacturers of

THE BEST POWDERED SHEEP DIP KNOWN.

Send for little booklet giving full information.

A. E. HUTCHINS & CO., U. S. Representatives,  
Hayward Building, SAN FRANCISCO, CAL.



**MONARCH**  
Grubber and Stump Puller.  
HOOKER & CO.,  
16 and 18 Drumm Street, San Francisco



**FLEMING'S LUMP JAW CURE**  
Easily and thoroughly cured. New, common-sense method, not expensive. No cure, no pay. FREE. A practical, illustrated treatise on the absolute cure of Lump Jaw, free if you ask for Pamphlet No. 217. Fleming Bros., chemists, Union Stock Yards, Chicago, Ill.

## SPRINGTIME

is the time to place these supports on your trees.



Don't wait until your trees are bent out of shape and broken with weight of fruit. Cheaper than the cheapest. Economical, durable, perpetual.

HOYT'S PROPLESS TREE PROP,  
WATSONVILLE, CAL.

AGENTS WANTED.

## THE "BOSS" TREE PROTECTOR. Made of Yucca Palm.

Is cheap, durable, and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn, grasshoppers or dry winds. Can be easily removed; will last for years.

Send for samples.

PRICES:

12 inches long,	\$ 9.00	per 1000.
14 "	10.00	" "
16 "	11.50	" "
18 "	12.50	" "
24 "	15.00	" "
30 "	17.50	" "

Agents Wanted  
Everywhere.

YUCCA MANUFACTURING CO.,  
450 SANTA FE AVE., LOS ANGELES, CAL.

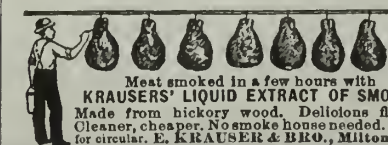
## PATENTS OBTAINED IN ALL CIVILIZED COUNTRIES. EXPENSE SAVED INVENTORS BY PRELIMINARY SEARCHES. COMMUNICATIONS CONFIDENTIAL.

Our U. S. and Foreign Patent Agency presents many and important advantages as a Home Agency over all others, by reason of long establishment, great experience, thorough system, intimate acquaintance with the subjects of inventions in our own community, and our most extensive law and reference library, containing official American reports since 1793, with full copies of U. S. Patents since 1872. As a result we are able to give reliable advice as to the patentability of an article, frequently saving the inventor the cost of an application. Our Washington branch tends exclusively to our business before the Patent Office. All worthy inventions patented through DEWEY, STRONG & CO.'s Patent Agency will have the benefit of a description in the Mining and Scientific Press. We transact every branch of patent business, including filing of Caveats, Trade-Marks, Copyrights, Labels; prepare Assignments, Licenses and Agreements; give Opinions on Patentability and Infringements, etc. Circulars free on application.

**DEWEY, STRONG & CO.,**  
(ESTABLISHED 1860.)

PATENT AGENTS,

330 Market Street, San Francisco, Cal.  
and 918 F Street, Washington, D. C.



Meat smoked in a few hours with KRAUSERS' LIQUID EXTRACT OF SMOKE. Made from hickory wood. Delicious flavor. Cleaner, cheaper. No smoke house needed. Send for circular. E. KRAUSER & BRO., Milton, Pa.

FINE BLOODED Cattle, Sheep, Hogs, Poultry, Sporting Dogs. Send stamps for catalogue, 150 engravings. N. P. BOYER & CO., Coatesville, Pa.

## DO YOU FEED SWINE?

For the most practical swine paper, giving up-to-date methods and market reports, send 10 cents in silver for four months trial subscription. Regular price 50 cents a year. Address

**BLOODED STOCK,**  
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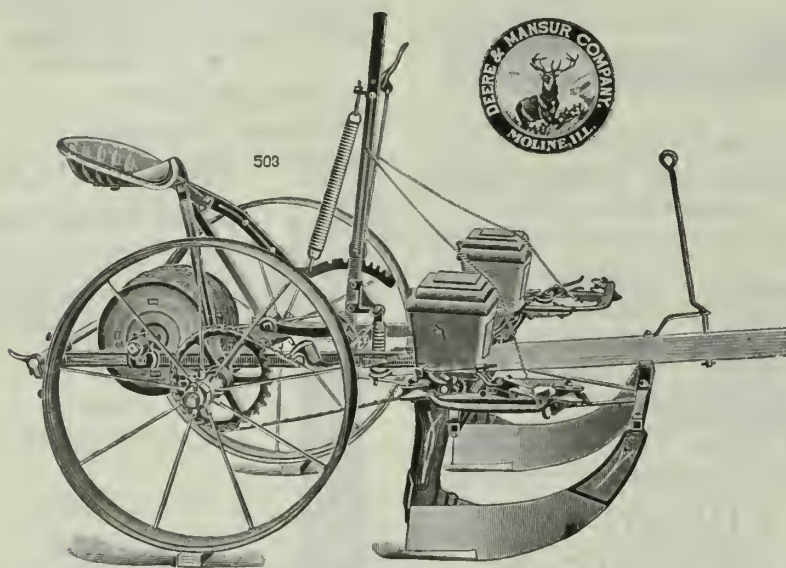
# WORTH YOUR CONSIDERATION.

Few farmers stop to consider what they lose from the use of a planter which is not provided with an accurate drop. It is only a stalk here and there, but it counts, as the following figures will show:

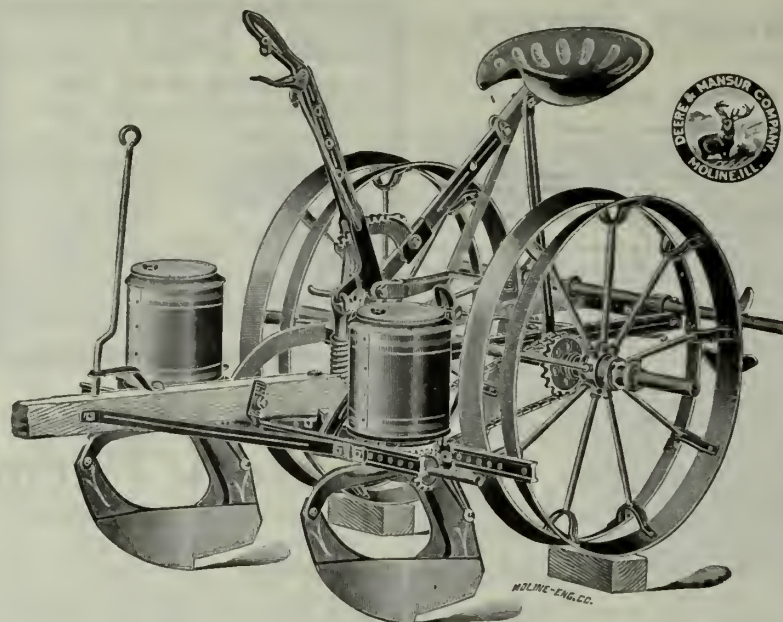
There are 43,560 square feet in an acre, and with corn  $3\frac{1}{4}$  feet apart, there are 3434 hills. It requires 110 ears of average sized corn to make a bushel. Taking corn at 50 cents a bushel, the loss would figure as follows: The loss of one ear from

EVERY 2d HILL, 15.6 BUSHELS PER ACRE, VALUE \$7.80  
EVERY 3d HILL, 10.4 BUSHELS PER ACRE, VALUE \$5.20  
EVERY 5th HILL, 6.24 BUSHELS PER ACRE, VALUE \$3.12  
EVERY 10th HILL, 3.12 BUSHELS PER ACRE, VALUE \$1.56

**DEERE PLANTERS HAVE AN ACCURATE DROP.  
NO EARS LOST.**



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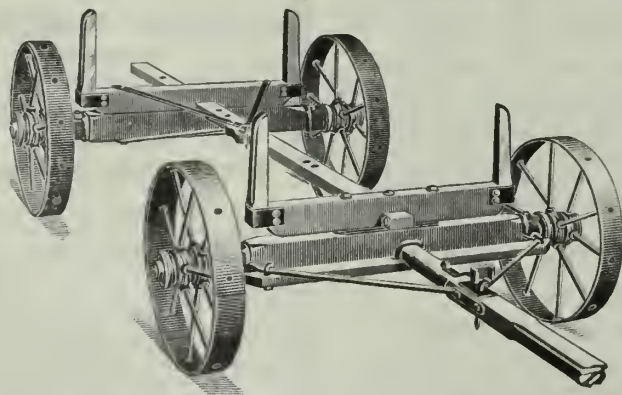
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# THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 14.

SAN FRANCISCO, SATURDAY, APRIL 5, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

## The Rooting of Orange Trees.

Though the rooting of all trees is modified somewhat by soil depth and irrigation practice, it is exceedingly important to determine in what respects root growths may differ when conditions are similar for all of them. Some interesting facts about the rooting habit of several citrus species are given in the University Bulletin on citrus fruit culture by J. W. Mills, to which we have already made commendatory allusion. The photo-engravings on this page show at a glance the behavior of the roots he mentions. The sweet orange root is a persistent surface feeder, having almost its entire root system above a depth of 18 inches and rising to within 8 inches of the surface. This stock produces an abundance of fibrous roots that concentrate near the surface, just beneath the reach of the plow and cultivator, thus making the tree too susceptible to drouth.

On the other hand, the root of the sour orange penetrates to a depth of 9 feet or more, sometimes having numerous laterals near the surface, and sometimes having fewer but more sharply descending laterals. Both a deep root system and broadly extending laterals, not too near the surface, are essential to the ideal stock. There would seem to be room for some selection among sour stocks so as to obtain

these qualities in the highest possible degree. Though the sour stock does not appear to bring trees into full bearing as soon as do the sweet orange and pomelo stocks, the value of the sour stock in other directions may compensate for this defect, and it seems probable that in localities where the sweet stock fails, sour stock will be used to a greater extent than now. It has been shown that the pomelo laterals are found at a somewhat greater depth than the laterals of the sweet orange. The pomelo produces more fibrous roots than do either of the other stocks, and consequently the tree is a ravenous feeder. It is resistant, to a certain extent, to the form of gum disease that attacks the roots of citrus trees. On the whole, the pomelo is deservedly becoming the favorite stock in southern California. In practice it has succeeded better at the station near Pomona than has the sour stock, which seems to lack uniformity of root growth, sometimes having few laterals, in which case the crops are small. The pomelo seedlings have made the best growth in the nursery.

There is still some prejudice against this as a bud-

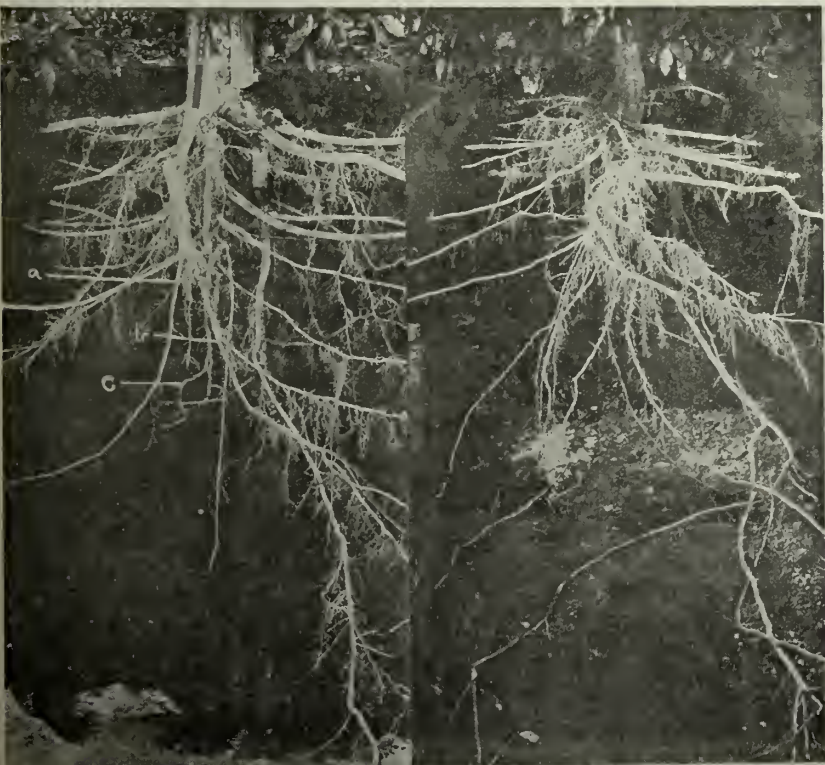
ding stock, as some growers think it less hardy than the sweet orange. It makes, however, a very healthy tree, and is said to stand next in value to the sour, or hardy, stock among Florida growers. The seed of the pomelo is easily obtained, and it germinates more quickly than does orange seed. The root system of a one-year-old pomelo seedling is excellent, but the tap root is crooked, like that of the sweet orange.



Sixteen-Year-Old Orange Tree on Light Sandy Soil, Short of Water.



Main Root System of a Thirty-Year-Old Sweet Seedling



Sweet Orange Stock, Ten Years From Planting.

Pomelo Stock, Seven Years Old.



Washington Navel on Florida Sour Stock Root, Nine Years Old.



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E. J. WICKSON. Horticultural Editor

San Francisco, April 5, 1902.

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## The Week.

Light rains and freedom from heavy frosts have brought the past week close to the ideal of California springtime. Reports from the East have heralded the leonine ending of March, which has brought discomfort to people and danger to products. On this coast we have had only a slight lowering of the temperature, particularly in places along the coast open to the play of the northwest wind; elsewhere good growing weather and notable advance of vegetation have been widespread. Hopeful people are rolling up large figures as the measure of coming crops and present conditions favor such forecasts. The whole State is in better heart than it has been for some years back because regions which have endured hardships have been led to rejoicing in view of larger water supplies. There ought to be a good, busy year all through the State.

Spot wheat has been steady all the week, though the speculative market has drooped, but recovers strength as we close our report. The Chicago market fell badly, even to the lowest point of the year, but has rallied again. Shipments were rather light; one full cargo of wheat and two others mixed with barley and rye. Barley prices are still high for feed, nearly to the brewing figure. Oats and corn are quiet and unchanged; they are held high and go slow. Rye is steady. Beans are still unsettled for all white beans and Limas, while most colored beans hold up well. Bran values are declining, but not much is offering and the trade is in small lots. The best stable hay is a trifle steadier. Beef is unchanged, though there is a little better supply. Mutton is steady and Lamb a shade lower and with wider range. Hogs desirable for cutting up are higher and not much is being packed. Butter is lower, but there is a brisk demand at the lower range for Northern shipment. Cheese is quiet and unchanged for new, with choice old cheese higher. This is rather a new course for this market. Eastern cheese prices are higher. Eggs are going into cold storage rapidly; rates are about the same or possibly one-half cent lower than last week. Poultry is also lower than last week, though supplies are not large. The late advances restricted the demand. There is now no Eastern here and this may help things, as to-day the feeling is improving. Potatoes bring good prices if quality is satisfactory. Onions are quiet; the supply of fine onions is slack, though there are plenty of soft and sprouted stock. A few berries are arriving. Apples are unchanged. Oranges are in lighter supply, but there are still enough to prevent a rise, though the tone is better. Lemons are moderately

firm for strictly choice, while common are dull. Limes are lower. Dried fruit is going slowly at old rates. Almonds are cleaning up and are firm; even ordinary lots are bringing good prices. Walnuts are in good shape. Honey is barely steady and hops unchanged. Wool is largely sold to arrive and local trade has little to go upon. The demand is, however, promising.

Eggs and honey are not the biblical standard of plenty but they are minor products which bring plenty to some of the most prosperous sections of California. It is gratifying in view of the unfavorable conditions prevailing for several years at the south to know the State yields only to imperial Texas as a honey producer. A forecast of the honey report of the census of 1900 shows that during the year 1899 there were produced 61,196,160 pounds of honey and 1,765,315 pounds of wax, of an aggregate value of \$6,664,904, for the United States. Of the States reporting honey, Texas reports the largest quantity, 4,780,204 pounds. California reports the second largest quantity, 3,667,738 pounds; New York the third largest, 3,342,497. The counties showing the heaviest production are Fresno, San Diego and Tulare of California and Tompkins, Cayuga and Seneca of New York. Thus California has the three foremost counties of the whole country, and it does not matter that they are very large counties for the bee has only struck a little corner of any of them yet. It is, however, a very interesting fact that the center of the honey product of the State is now not in the mountain sagebrush, but in the alfalfa regions of the great plains. Who would have believed it!

The hen also has only entered fractions of a few counties as a commercial institution and most of our consumers are in a scramble after the Eastern eggs, which are railroaded into the State. And yet the present poultry doings are respectable, for the Census Bureau gives the California summary as follows: Farms reporting, 55,479; value of poultry, June 1, 1900, \$1,877,489; value of poultry raised in 1899, \$2,492,067; dozens of eggs produced in 1899, 24,443,540; value of the same, \$5,864,679. This makes a total of about eight and a third millions as the value of the poultry product. This is about half of the local figures for the dairy output, and who would have thought a hen was half as big as a cow?

Figures seem rather interesting this week, so we will go on one step farther. No one gets much satisfaction out of the small wool product of California except the people who are afraid that the sheep will eat up the big trees. They ought in consistency to wear cotton clothing and in no form patronize the despicable sheep—except in chops, perhaps. For the California wool product is hardly a shadow of its former greatness. The census gives the California product, based on the clip of the fall of 1899 and the spring of 1900: Farms reporting, 3520; fleeces shorn, 2,882,305; weight of fleeces (unwashed), 13,680,495 pounds, value \$1,707,088. Mohair and goatshair fleeces shorn were valued at \$45,665. Tehama is the largest wool county in California, producing 1,648,750 pounds. Mendocino is next with 1,089,490 pounds. Montana and Wyoming greatly exceed California in wool growing, Montana producing 30,437,829 pounds and Wyoming 27,758,309 pounds.

An interesting story is given on another page to the effect that there is no way to bring the prune combine to a full stop, but that its restless ghost must frequent familiar places for a generation to come. It is unfortunate that the old methods of quieting perturbed spirits have gone out of use, for here would be a great chance to test their efficacy. We imagine, however, that the future life of the organization may prove to be a sort of legal fiction, for it can be evidently practically killed by throwing it into innocuous desuetude. Probably this is what the managers have in mind, for it is announced that President Woods says he intends to send a circular letter to every member of the Association, asking for an expression of the wish of the members whether the Association should continue or be closed up. Mr. Woods thinks this letter can be mailed in about five or six weeks. By that time he believes the outstanding accounts due the Association from buyers will be closed and the money due the growers can be paid them. All the prunes

have been sold and within the time mentioned the accounts will all mature and be paid. There is due the association about \$40,000 from the 1901 crop and about \$250,000 from the 1900 crop. Mr. Woods said that these sums would be distributed as soon as received and the future of the association would then be in the hands of its members who, according to the account printed elsewhere, could not do anything whatever with it. It would not be the worst thing in the world to have the association proceed if it could by waiting command respect and support and do the work for which it was formed. Probably we shall know more about that later.

The Grain Growers' Association directors are proceeding with their work. At a meeting last week in Sacramento they elected the following officers: President, George W. Pierce of Davisville; first vice-president, B. F. Walton of Yuba City; second vice-president, D. Reese of Sacramento. The selection of a secretary and treasurer was deferred until the meeting to be held this week, at which time the salaries of directors and officers may be fixed. Very soon, then, we may expect the opening of an office in this city and attention to the business thereof. We make this statement because people are calling upon us for the information. Evidently the organization is attracting attention beyond the area covered by the promotion meetings.

It may affect the local wheat outlook somewhat that there has been, according to telegraphed reports, very wide grain killing in the upper parts of the coast. The report from Portland is that half a million acres of fall-sown wheat was killed in Oregon, Washington and Idaho, the damage occurring almost entirely in February. The monetary loss will reach \$2,000,000, and there will be a shortage of 3,000,000 bushels in the production of the three States named. The figures were arrived at after a careful canvass of the wheat growing territory by the principal milling and exporting houses of Portland. The entire acreage of winter wheat that was killed has been resown as spring wheat, 500,000 bushels of grain being required for seed. The remaining 2,500,000 bushels shortage is accounted for in the difference between crop average that would have been produced as winter wheat and what it will produce as spring wheat. The average loss is five bushels to the acre. This has been proven by experience. The country most affected by the cold is the region known as the inland empire.

## QUERIES AND REPLIES.

### About Johnson Grass.

TO THE EDITOR:—Where can I obtain the most authentic literature on Johnson grass? I wish especially to know whether it will grow on alkali land, such as that to be found southwest of Fresno and about Traver, and whether it requires a moist soil and is as persistent as the Bermuda grass.—READER, Fresno.

TO THE EDITOR:—I have a lot of tule land on which the wild feed has totally disappeared and cockle burs have taken its place; also, a number of acres of sediment land that have become so foul with morning glory that it does not pay to farm.—FARMER, Woodland.

The literature of Johnson grass is scattered through reports and agricultural newspapers and for the last few years in California has consisted almost entirely of descriptions of ways to get rid of the plant. It has proved a most persistent pest on all fine, moist loams, where it was desired to grow something more profitable. The character of its roots and the rapid distribution of its seed makes it almost impossible to clean land when once infested with it. Johnson grass will endure more alkali than alfalfa, rye grass or other popular forage plants. It will not, however, grow in the strongest alkali. It is as persistent as Bermuda grass and it requires a moist soil, for experiments to establish it on waste, dry uplands have all failed. It is noted for growing where it is not wanted to grow and of refusing to grow in places where it might be of some account.

We can not answer the question whether Johnson grass would survive a submersion of two to four months, because we have no experimental testimony on that point; perhaps some reader will furnish it. We believe, however, that it would readily survive,



judging from the character of the root. On moist, sediment land it will attain a height of 4 to 6 feet readily and make coarse, woody stems. It is well adapted to the grazing of hogs while the growth is young, and it is also claimed that the roots, which are thick and fleshy, are good for hog feed. Just how nutritious they are, we understand the University will soon determine by an analysis requested by growers in Fresno county. Johnson grass is, however, rather a poor grass. It is also almost impossible of eradication on moist, sediment lands. We should think such lands, even when liable to overflow, would be vastly better for grazing if seeded with red clover and Australian rye grass, because these will make a growth in every way richer and better than Johnson grass and can be readily eradicated if the land is wanted for other purposes.

#### Alfalfa in the Orchard.

To THE EDITOR:—In Farmer's Bulletin No. 116 you speak of "Cover Crops in the Irrigated Orchard." Now my ranch is in good, alluvial, rich, deep soil, and trees on most of it from ten to twelve years old. I have water within 4 feet of the surface ordinary years and within 5 feet of the surface during the last two dry years, and I would like to follow your directions and put in alfalfa, which does very well here, if you think it would not be a detriment to my fruit trees. I have five acres in prunes and about five acres in plums of different varieties, these plums being among the very best raised in our valley. I would like very much to do away with cultivating this orchard and to get the benefit of the alfalfa if you think it would not hurt the fruit trees. The land is very rich and I have plenty of artesian water with which to irrigate; and should the land at all become impoverished, I can pump out of the city sewer running through my ground, which yields an immense amount of fertilizing matter.—ORCHARDIST.

The proposition which you mention suggests a very interesting experiment, and an actual experiment is needed to demonstrate the effect upon the trees of growth of a cover crop of alfalfa under the conditions which you describe. The value of alfalfa in an orchard seems to have been demonstrated in hot, interior situations where the soil is very light and deep, and where moisture is abundant for irrigation. Under these conditions both the trees and the alfalfa root deeply in the soil—that is, to a depth of 20 feet or more. When this is the case it seems clear that both trees and alfalfa thrive together. If the alfalfa is not cut for hay and removed from the soil, but is cut and allowed to disintegrate, its decaying foliage adds to the plant food in the soil.

Cover crops are being demonstrated to be valuable in Eastern orchards where the soil is not of very great depth, but there the growth is dependent upon the summer rains. If, as in your case, there should be need of the additional moisture, the absence of summer rain could be compensated for by irrigation, as you propose.

We judge from your letter that one would find standing water on your place at the bottom of the hole dug 4 or 5 feet deep. If this is the case, the growth of your tree roots, and of the alfalfa roots as well, would be confined to this surface stratum—that is, to the soil above the standing water. All the roots of the fruit trees and the roots of the alfalfa would then be collected in this surface layer. Whether under these conditions the growth of the alfalfa would tend to check or injure the free growth and fruiting of the fruit trees could only be determined by actual experiment. We know of no case in which the demonstration has already been made, consequently, as said at the beginning, your description suggested an experiment. It might, and we apprehend that it would, work very satisfactorily because of the ample moisture below, which could be drawn upon both by the alfalfa and trees according to their several needs. We cannot see that any great risk would be incurred by the experiment. You will have the recourse to pumping, to drown out gophers which are likely to multiply in the alfalfa, also for applying any additional water that might be needed, and you might demonstrate the feasibility of a policy on such soils which would be of very great advantage.

#### Lime, Salt and Sulphur Wash.

To THE EDITOR:—In the formula for making the lime, sulphur and salt wash, recently published in the columns of your paper, the direction is given to boil the lime and sulphur and water "not less than one hour and a half, or until the sulphur is thor-

oughly dissolved." I find that the mixture becomes of an amber color in half an hour. Is this long enough to boil before putting in the balance of the lime and salt? I am using powdered sulphur. How late can this spray be safely applied? Why is it necessary to slack the thirty pounds of lime in hot water? Should the spray be applied hot or can it be made up one day and applied the next, or some days after, without heating again?—NEW SUBSCRIBER, Guerneville.

The reason why an hour and a half is prescribed for the lime, salt and sulphur wash is because less cooking is apt to leave part of the sulphur undissolved and therefore not converted into the combination with the lime, which is most effective. Possibly you have reached this with fine sulphur, but the probability still remains that more cooking would make you a better wash. The lime is slacked in hot water because the slacking is more quickly and more evenly accomplished. It should be a smooth article and not gritty, and heat promotes this. The wash is most effective when applied fresh. It can be safely used until you can see the color in the bloom buds. After that appears it is dangerous to the blossom. If, however, your trees are apt to bloom too full, and you do not mind destroying some of them, the earliest to open may sometimes be disregarded. In spraying for the peach moth, it is desirable to use the wash as late as it can be safely done.

#### A Sapsucker.

To THE EDITOR:—I have a walnut tree, ten years old, 14 inches in diameter at the butt, on which a woodpecker or sapsucker is continually working and pecking the trunk full of holes, so much so that in some instances the sap runs out, and there are places where he has girdled the tree. My wife contends that he is injuring the tree and will eventually kill it, while I am of the opinion that he is after worms and will do the tree good. The bird in question is of the woodpecker family, has a bright-red topknot and body spotted like a flicker. He is larger than the sapsucker I knew in Pennsylvania. Please set us right on this subject, for it is a question of life or death to the woodpecker.—SUBSCRIBER.

We find it safest, as a rule, to take the lady's side in such controverted questions. The sap sucking woodpeckers sometimes do considerable injury to fruit trees. It seems to be pretty well demonstrated that they have acquired a taste for the sap wood and that they indulge in this and are not seeking insects, as woodpeckers properly should do. In this State the sap sucking woodpeckers are of different species than those which are common at the East. Where a bird manifestly injures a tree, as this one seems to be doing in your case, it has to be shot.

#### A Suspected Fern.

To THE EDITOR:—I am sending in this mail a sample of fern which grew on a foothill cattle ranch and at about 1500 feet elevation. I am told that it is known to stockmen as "black fern" and that cattle die from eating it. Will you name this plant and state whether or not it causes death if eaten by cattle?—W. H. J., Porterville.

The fern of which you send a specimen is *Gymnogramma triangularis*. We have diligently examined all the literature of plants poisonous to live stock (and quite full accounts of this special subject have been published by the U. S. Department of Agriculture) and do not find any mention of this plant. If you would send a specimen, with an account of its local reputation, to Mr. V. K. Chestnut, Division of Botany, U. S. Department of Agriculture, Washington, D. C., he will give you authoritative statement concerning it. He has given more attention to this subject than any other man in the United States.

#### Growing Resistant Stock.

To THE EDITOR:—Is it advisable to graft resistant grape scions on non-resistant stock? Will the canes grown in that way retain their resistant properties? I have some canes of *Rupestris* St. George that are too large for tongue grafting and not large enough for cleft grafting. Would like to know which is the best and quickest way—to graft them on some old stock or set them out in nursery and root them?—E. MERKEL, Ione, Amador county.

If you wish to secure as much resistant wood as possible to make cuttings of next winter, graft the scions you speak of into strong vines of any kind which you have at hand. The canes will retain their resistant character. If you simply want to turn the surplus cuttings into rooted resistant vines to be grafted next winter, root them in the nursery.

#### Pear Scab.

To THE EDITOR:—What is the best spray for pear scab and how should it be used?—FARMER, Forestville.

Lime, salt and sulphur is a good winter spray to clear the trees from spores on the bark. After growth starts the Bordeaux mixture is the proper remedy. It should be sprayed on the first time when the fruit is small, so as to protect it from the attack of the fungus. By using one pound of Paris green to 200 gallons of Bordeaux mixture you can strike both the scab and the codlin moth at one spraying.

### WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending March 31, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director

#### SACRAMENTO VALLEY.

The weather has been generally clear and cool during the week, becoming warm toward the close, and no rain has fallen. The dry north winds have hardened the bottom lands in some sections, and winter wheat is not doing well there. All grains in light soils are growing rapidly and are in splendid condition, with prospects for unusually heavy crops. Green feed is abundant. Plowing and cultivating are in progress, and some tree planting is being done. The warm days at the close of the week hastened the blooming of cherry trees at Vacaville. All deciduous fruits are in good condition, and the largest yield ever known is now predicted.

#### COAST AND BAY SECTIONS.

Nearly half an inch of rain has fallen during the week in the southern coast counties, with light showers in the central and northern districts. There was a hailstorm at Peachland on the 25th, and light snow in the vicinity of Willits. The temperature has been nearly normal. Light frosts have occurred in some sections, but early fruits have not been seriously damaged. Grain is in excellent condition in all sections and has made rapid growth; large crops are expected. A correspondent at Cloverdale states that all crops made better growth in the past week than during all the season. Pasture is abundant and stock are doing well. Deciduous fruits are in good condition and making favorable progress; there will probably be a large yield.

#### SAN JOAQUIN VALLEY.

The temperature continued slightly below the normal during the first of the week, but warmer weather prevailed at the close. Occasional light frosts caused no damage. Rain fell in nearly all sections Monday and Tuesday, with hailstorms in the vicinity of Bakersfield. The rains were too light to interfere with farm work, but benefited growing crops to some extent. Grain is in excellent condition and now making good growth. The acreage in some sections is somewhat less than last season's, but prospects are good for unusually heavy crops in the central and northern parts of the valley and good crops in the south. Green feed is plentiful and of good quality. Stock of all kinds are doing well. Deciduous fruits are rapidly coming into bloom and give indications of a large yield.

#### SOUTHERN CALIFORNIA.

Cool weather has continued during the week, with light frosts in some places. Rain fell in all the southern districts on the 24th, and there was a heavy fall of snow on the Sierra Madre and other mountains. A hailstorm occurred at Redlands Monday afternoon. The soil is in excellent condition, and warmer weather will cause a rapid growth of grain and grass. Wheat, barley and hay are doing well, and in some sections will yield fully average crops. Pasture is plentiful. Trees and vines are in excellent condition, and early deciduous fruits are coming into bloom; prospects are good for a large yield.

LOS ANGELES SUMMARY.—Cool rain first of the week, followed by fair, warm weather. Crops are advancing rapidly and grain is stooling finely. Vines are starting. Orchard and farm work are active.

EUREKA SUMMARY.—Cold, north winds at the middle of the week dried the soil; considerable plowing and seeding being done. Warm weather and sunshine needed. Fruit prospects are good.

#### Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, April 2, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the Week.	Minimum Temperature for the Week.
Eureka.....	.20	44.50	42.74	36.09	54	38
Red Bluff.....	.64	28.39	22.22	21.38	72	42
Sacramento.....	.10	15.56	17.48	20.58	74	42
San Francisco.....	.19	17.14	18.94	22.47	68	42
Fresno.....	.12	6.22	10.28	10.97	69	32
Independence.....	.00	4.13	5.81	5.22	63	32
San Luis Obispo.....	.42	19.82	27.62	16.68	72	36
Los Angeles.....	T	10.37	14.11	15.89	74	40
San Diego.....	T	5.85	10.65	7.29	70	46
Yuma.....	.01	.68	3.60	2.79	86	42



## THE STOCK YARD.

### The Importance of Selection in Breeding Animals.

NUMBER II—CONCLUDED.

By LEROY ANDERSON, Instructor in Dairy Husbandry, University of California, at the annual meeting of the Jersey Breeders' Association of Southern California at Riverside, March 15, 1902.

**NEED OF CLOSE OBSERVATION.**—The ability to detect the gradual changes in animals is a prime requisite of the skillful breeder, for the importance of selection lies in the power of the breeder to select these scarcely appreciable differences in the animals which he is handling. Such differences are capable of transmission, and if they can be accumulated after a few generations the result may then be seen by every one. You who are with cattle every day can point out defects in certain particulars or good indications in other directions which I could not see before your suggestions were made. It requires constant study and a faculty for close discrimination—which, unfortunately, few persons possess—to be able to see the minute variations which should be seen in order to give to selection its greatest value in breeding animals. Having discovered the differences, however small, if the breeder take advantage of them he can work wonders in the development and improvement of his herd. As a breed grows older and the various families or strains have been bred along similar lines, the individuals become more and more uniform in characteristics and the difficulties attending wise selection increase. Improvement, therefore, becomes more gradual and the breeder who desires to do his share in the upbuilding of his favorite breed must be alert and be acquainted with his individual animals.

**AIMS IN SELECTION.**—The effects of selection are seen in the general development of the whole animal, but more particularly are they shown by a development of such parts of the animal as are most highly prized as a source of beauty, food or revenue. The hair of the Angora goat is made finer during succeeding generations because that is the part of the animal which is most valued. The wool of the Merino and the mutton of the Shropshire have been greatly improved in quantity and quality because these were considered of highest value. The loin and thigh of the beef animal have been increased in size because the breeders have sought meat rather than milk production, and they have striven to put the flesh upon such portions of the animal as will bring the highest financial return. The dairy cows have been induced to give ever increasing amounts of milk, oftentimes to the injury of good form. And all these things have been done by men selecting the animals for breeding purposes which showed the strongest tendency to form the product which he considered most valuable. He led his cattle to produce milk or meat according as his conditions determined whether he could receive larger returns from dairy or beef products.

It is not to be supposed that the Shorthorn was developed as a beef animal and the Holstein-Friesian as a dairy animal because there was no other alternative in either case. Possibly natural food conditions were such as to foster the development of the two breeds as we find them to-day. Nevertheless, if the men who are responsible for the breeds had selected for breeding the Shorthorns that showed the greatest tendencies toward milk production, and the Holstein-Friesians that showed the strongest tendencies toward flesh production, the tables would have been reversed and we would to-day be classing the Shorthorn among the special dairy breeds and the Holstein-Friesian among the beef breeds. The facts are that the English people were demanding a better quality of meats and the originators of the Shorthorn set about to supply the demand by breeding their cattle accordingly. In Holland market conditions were such as to make butter and cheese more profitable than beef alone, and so the Dutch farmer selected his best milking cows to breed from. Along similar lines selection has shown its results in all kinds of animals.

**JUDGMENT IN SELECTION.**—The breeder may know ever so thoroughly the possibility, the importance and the effects of selection, but in the practice of selection—"there's the rub." It is one thing to know what ought to be seen and done; it is quite a different thing to see and to do. The breeder may be skillful in discrimination of slight variations, but some day he is obliged, in order to prevent inbreeding, to depend upon a brother breeder to select a sire to head his herd. This sire may not prove to be a good selection, but the circumstances are such that he must be used, with the result that many of the valued points toward which the breeder had been working for years are lost in a generation. The moral would seem to be that each breeder should make personal selection of all his stock. This, however, is impossible in most instances. Another man's ideas of excellence and judgment must be depended upon when, if anything goes wrong, there remains the satisfaction of laying the blame on the other fellow.

It may be some consolation to believe that a larger stress needs to be laid upon selection, so far as the eye is concerned, in meat producing than in dairy stock. Outward form may be some indication of milk

qualities, but the real and accurate judgment must always be based upon the yield of milk and butter. Dairy qualities and power for production should have first place over any fancy points of color or form. Happy is the man who can combine in his animals both beauty of form and profitability of production. But form, other than that which is necessary to indicate strength of constitution and capacity for production, should usually be sacrificed, if necessary, for production itself.

The chief criterion for judgment in selecting his animals being actual production, the breeder of dairy stock has his work simplified by the use of modern and convenient methods for finding what his cows are doing. The Babcock test is much easier than the churn, and equally accurate, in determining a cow's production of butter fat. We need not consider butter. It is not produced by the cow, but is made by man. And I hold that a breeder of thoroughbred dairy stock who does not systematically test his cows so as to know at least the approximate yield of each one is not living up to his opportunities and is not worthy of patronage by those who are seeking animals for breeding purposes. In the first place, he does not know which are his best cows, nor which are showing the greatest variation or improvement over their dams. Second, if he knew what each cow were doing he could sell some of his stock for twice the money he now receives, because of the authentic records behind them. Moreover, he might send some of the bulls, which he is now selling for breeding purposes, to the butcher and thereby improve the breed.

**DESTRUCTION OF THE UNEFIT.**—This thought calls to mind again our text, viz., that vastly more animals are born than are needed for breeding purposes. It is unfortunate for the sake of a more rapid improvement of all breeds that this is not as true in practice as it is in theory. The fact is that there is a demand for very nearly all the thoroughbred dairy stock that is born, and that for breeding purposes. Breeders, then, cannot be blamed for selling a bull calf for as much money as the same animal would bring for beef at the age of two or three years. But so long as this continues we cannot look for as rapid improvement, even among thoroughbred stock, as we could if a more rigid selection were followed even to the killing for veal of one-half of all calves that are born. Because a calf is eligible to have its name recorded in a herd book is no sign in itself that it is worthy of an opportunity to perpetuate its kind. Such opportunity should be given only upon the basis of actual production by its immediate ancestors. One reason, at least, why so much fault is found with thoroughbred stock on certain occasions is because a careful selection is not made, and because of the opinion—too often prevailing—that an animal must be good because it is a thoroughbred. The time will probably never come when there are not some poor individuals in any or all breeds, but they will grow less only in proportion as there is a rigid use of the knife upon all inferior animals.

If the cattle club or registry association does not provide a roll of honor wherein may be entered the names of all animals which have proven themselves capable of high production, then let the breeder establish a roll of honor for his own herd and let him follow closely its figures when mating his animals. Let him combine the teachings of its pages with what his eye tells him of individual merit as to form and quality, and his matings will be of such an order as to give him ample reward for all his trouble. In selecting breeding animals, then, there must be considered individuality, the breeder's idea of the standard of excellence, and, above all, the pedigree that is supported by a high, uniform production.

I would consider myself as losing an opportunity did I not add a word of encouragement, though you may not need it, to you who are working for the upbuilding of one of the greatest wealth-producing breeds of cattle that the world has known. That you are daily in contact with nature and nature's forces is in itself a cause for congratulation. But there is still greater cause when we consider that you are using these forces to mold new types and to improve upon old ones. The forces with which you are working are plastic and mobile, ready to respond to the slightest touch or change in environment which your mind may dictate and which your study may tell you is wise. The world needs more Burbanks—men who study nature carefully and live with her to find out her ways of working. Although the Burbank whom California is proud to call her own works in the field of plants, there is opportunity for the same spirit and the same attention in the animal field. Results may come more slowly, but, if followed diligently, they are bound to bear fruit. Moreover, the fact of having an ideal and striving to attain it, is a virtue in itself and makes a man among men. There is reason for thanksgiving that we have the field of nature in which to work, and I congratulate you that you are so well advanced therein.

In splicing a wire rope the "long splice" should be used, from 30 to 50 feet in length. Thus the thickness is not increased, the flexibility not impaired, and there is nothing to catch on passing over the pulley. In manila or hemp rope a "short splice" is better, as a long splice does not hold so well, but such splice should not be less than 30 inches.

## AGRICULTURAL SCIENCE.

### A Fertilizer Control Law for California.

By DR. E. W. HILGARD of the University of California, at the Farmers' Club Convention at Pomona, March 27, 1902

At four consecutive sessions of the State Legislature fertilizer control laws have been before that body and as often have they failed to become laws. It now behooves the farmers of the State to consider what shall be done about it at the coming session of the Legislature, and they should, therefore, consider earnestly once more if they want such a law, and, if they do, what must be done to prevent its being again defeated by the same agencies that have brought about previous failures.

First, then, do the farmers of this State want and need such a law? The efforts already made prove to my mind that they do want it; it is not by their influence that it has been defeated heretofore. The utmost that can be said is that they have not been sufficiently energetic in asserting themselves and in bringing stress to bear on their representatives to see that their will was obeyed.

**IS THERE NEED OF SUCH A LAW?**—It seems to me that the experience of the great majority of our sister States in which control laws are in force should be conclusive on this point. Not only have numberless attempted frauds been unearthed, but the record shows that with the feeling of security against fraud brought about by the control law, the use of fertilizers has enormously increased, to the great benefit of both farmers and honest manufacturers; while the producers of fake products have found their occupation gone, but have revived their traffic in the States having no such laws. A good fertilizer control law is quite as much in the interest of honest manufacturers and dealers as in that of the farmers themselves, and, by the increase of production, it increases the general prosperity. Why, then, have our fertilizer bills been defeated, and by whom?

I must do our regularly established manufacturers the justice to say that, so far as their products have come under the observation of the experiment station, they have been remarkably near "up to guarantee" in their composition; and it may be asked why, if this is so, should there be any need of fertilizer control?

The answer is that there are both black sheep and negligent workers in every occupation, and the farmer should be protected by the State against either or both, since it is as impossible for him to judge of the correct composition of the fertilizer he buys as it is to know whether the druggist dispenses to him the medicine in accordance with the physician's prescription. The State does not intervene to protect him against the purchase of a poorly made plow or hoe; he ought to know a good or bad tool when he sees it. But he can not help himself in the case of a fraudulent or poorly made fertilizer, for even if he can show that it produced no benefit, it may be due to his own careless tillage, or to the season, or to another of half a dozen things which he would have to prove or disprove in court, if he were so ill-advised as to attempt to obtain damages from the "fertilizer man" who sold him the stuff. He needs protection against crop failure resulting from an inefficient fertilizer, in addition to the loss of money spent in its purchase.

All this has been so thoroughly discussed and recognized that all the prominent agricultural States of the Union beyond the Rockies have acted upon it and have fertilizer control laws, which experience has gradually so perfected that it is now suggested to make these laws uniform for all. Still, different conditions require differences in legislation; this is particularly true of California, where agricultural practice must differ in many respects from that of the East. When, therefore, it is urged that we should adopt integrally the law of some particular State, as has been done in the past, it is not well to accept blindly whatever has proved effective elsewhere.

**HOW THE WORK CAN BE DONE.**—Let it be fully understood that a fertilizer-control law is a police regulation and, as such, does not fall within the province of either university or experiment station work; so that the funds appropriated for either of these institutions could not lawfully be used for the purpose. The State must, directly or indirectly, provide a special fund for this work, but may require it to be done by the University or by one of its departments. In nearly all the States the experiment station has been charged with it, for the obvious reason that the station's duty is to work for the farmers' benefit generally and that advice regarding fertilization is among the things most commonly asked for by them. To do this in a practical way the station must be familiar with the fertilizer trade in the State, and fertilizer control affords the best opportunity to acquire that knowledge. Beyond this, and the interest of agriculture in general, the station and the College of Agriculture are not interested in having this additional work put upon them by the State. But they are strongly interested in that such a law, when enacted, shall be framed as to be effectual, and shall not subject them to the imputation of inefficiency, or something worse, either from inadequate provision for the



necessary expenses, or by provisos and exceptions which in themselves render the law and its agencies powerless to render the services intended.

**PREVIOUS LEGISLATION.**—The law, as passed by the last Legislature and finally vetoed by the Governor, was most objectionable on both these counts, having been amended out of shape by cunning manipulators so that it would, as I said at the time, have been the laughing stock of the other States and of all well-informed persons. In the first place, the proposed sources of revenue to cover the cost of the work had been cut into half, rendering it impossible to employ a competent chemist or to defray the expenses of laboratory work, collection of samples, etc. In the second place, the same astute manipulators had caused to be exempted from the operation of the control law precisely the class of products most in need of supervision, namely, the slaughterhouse products, such as bone meal, tankage, dried blood, etc., which are notorious for their trickiness and in fact constitute the chief reason for the existence and enforcement of the fertilizer-control laws. The amendment of this emasculated statute at the coming session of the Legislature was also ingeniously provided against by deferring its going into operation until July 1, 1902, the obvious idea being that it would be easy to persuade the Legislature that a law which had been in operation only six months had not been sufficiently tested to justify its amendment at so early a date. So we would have had this precious statute in force for three years altogether—time enough, truly, to prove its inefficiency and also to bring on the station endless criticism and legal complication if we had attempted to enforce the ambiguous powers that remained in the mutilated law.

There was ample cause, therefore, for my suggestion to the president of the University that it would be better to have no law at all than to incur the risk involved, without after all being able to render any efficient service to the farming interests. This suggestion was forwarded to the Governor and his veto was a relief to my mind, although the president had suggested the possibility of advancing funds so as to begin work at least as early as January, 1902. Had this been done, it was my intention to have analyzed the exempted articles as well as the rest, law or no law, thus proving to the Legislature the need of embracing them in the control statute. But it turns out that no such financial arrangement would have been practicable.

It is idle to expect that good and efficient work can be done in this or in any other line without adequate pecuniary provision for competent men and good working appliances. As to the latter, it has been mistakenly stated that the \$1000 provided for in the bill for laboratory purposes was to be used for a building, and this was made a ground for objections. There is no need whatever of any new building in this connection; there is a building heretofore used for olive and other work requiring special appliances apart from the general agricultural laboratory, on account of the odors inseparable from general chemical work. In the present case it would be necessary to segregate the fertilizer work from the other laboratories because of the unavoidable offensive odors.

The building is at hand, but a separate outfit is required, which includes about \$400 worth of platinum ware alone; the running expenses are presumed to be defrayed from the current sources of income, viz., license fees and tax on sales, from which also the salary of a competent chemist—at least \$1200—would have to be defrayed, together with the cost of collecting the samples, expressage, fuel, gas, etc. Thus the current income must be at least \$2000 per annum, and should be \$2500; while the law as amended would hardly have yielded \$500 from foreseeable sources, the possible revenue from the tax on sales being a totally unknown quantity.

**HOW THE COST CAN BE MET.**—These different methods of providing for the cost of fertilizer control have been tried in other States. One is a direct appropriation by the State; another a uniform tax on each "brand" offered for sale; the third a tax on the actual sales, mostly per ton, gross, sometimes ad valorem.

The direct general appropriation is in operation, e. g. in the State of New York, where each year from 900 to 1100 "brands" are or should be analyzed. Imagine the perplexity of the unsophisticated farmer in the presence of such a number of brands, each one supported by numerous certificates and pressed upon him by active salesmen in the field! Among them is a large proportion of "special" fertilizers, warranted to produce respectively the maximum crops of the plants named by the manufacturer—wholly irrespective of the kind and condition of the soil. They are precisely in line with the quack nostrums which are supposed to cure all ills—"regardless of causes."

To abate this costly nuisance, some States have attempted to reduce the number of brands—most of which have nothing "special" about them—by making the tax bear on each separately named brand. However desirable the object, this method meets with considerable practical difficulty in the definition of a "distinct brand." In this State the number of brands already in the market is quite as great as desirable; many farmers prefer to order their own mixtures in preference to making the choice between the com-

peting brands. This is very rational and desirable as far as it goes; but if the dealer had to pay a brand tax on each such lot ordered, it would be a hardship and work against the desirable use of the simples, or of mixtures adapted to each case, both with respect to soils and crops, past and present, as is the practice in the old world, where mixed fertilizers sold ready-made are practically unknown.

The plan of taxing the sales at so much per ton to produce the needed revenue seems on the whole to commend itself, although suffering from the objection that the parties certifying to their sales might reduce the amount in order to evade the tax. This argument may be reasonably offset by the consideration that the statement of large sales is considered a good advertisement; so that reports of sales would be as likely to be above as below the actual. The best choice would, then, seem to lie between the alternatives of a direct appropriation by the State or a tonnage tax on sales. In the bill passed at the last session this tax was placed at 25 cents per ton—a sum which, if dealers should add it to the price of the fertilizer to the consumer, the latter could afford to put up with it for the sake of being sure of what he gets.

**AN IMPORTANT PROVISION.**—One provision of the law objected to by some manufacturers was the requirement that they should state in what form the nitrogen is present in their goods, alleging that they would thus be compelled to divulge trade secrets. This objection is again in line with the case of quack medicines. The above requirement is specially important in this State, in connection with the rainy season and the practice of irrigation. Fertilizer men are in the habit of stating the amount of nitrogen supplied in a fertilizer as "ammonia." This habit dates from the time when ammonia compounds were really the chief sources of nitrogen in fertilization. But nowadays not one fertilizer in ten really contains ammonia as such; the articles now used are animal offal or tankage, and most frequently Chile saltpeter—that is, nitrate of soda. It is known that plants take up ammonia directly only to a very limited extent; it is mostly first converted into nitrates by the soil bacteria, and nitrates are known to act most rapidly and fully upon crops, so that ammonia-nitrogen is rated at only nine-tenths the value of nitrogen in nitrates. Now ammonia, whether ready formed or given off in the decay of animal matter, remains in the soil practically without waste until it is nitrified—that is, converted into nitric acid—or is absorbed by the plants. But nitrates, whether formed in the soil or added in the form of Chile saltpeter, are readily washed out of the soil by rains or irrigation. It is thus seen that if the farmer, trusting to the statement "as ammonia," puts out his fertilizer in the autumn, or before heavy irrigation, he may have all the nitrogen he has paid for washed into the country drainage, if nitrates have been used to furnish the oxygen, which is the most expensive of all the ingredients supplied in fertilization. The farmer is surely entitled to know in what form the nitrogen is supplied to him, so that he may avoid such losses. If he knows his business, he will use no nitrogen in the most active, but also the most elusive form, as nitrates, in autumn, and in spring and summer only by installments as a top dressing, so as not to have it washed beyond the reach of his crop roots.

**SPECIAL BRANDS.**—In line with the claim of trade secrets, some fertilizer men contend that their peculiar combinations of ingredients are so valuable that the farmer can afford to pay from \$12 to \$15 more per ton than the valuation put by the stations upon the sum of the values of the several ingredients contained in their goods. Now it is freely admitted that valuations made by the stations on the basis of the wholesale prices must be increased to the consumer by the cost of grinding, mixing, handling, packing, etc., not to speak of commissions. But it is quite generally conceded that \$2 or \$3 is an ample allowance for all proper and necessary charges, and that fancy prices based on claims to the special efficiency of certain mixtures are not justified by the results. But it is also quite intelligible that the parties making these fancy prices and claims should object to control laws which put their wares upon their true footing alongside of others in the market. The objection is the same as that made against the pure-food laws by adulterators.

**THE FARMER'S INTEREST.**—It is not unnatural that people should like to do as they please in their business. But, on the other hand, it is the right of the user to know whether or not he is being imposed upon. That is the simple issue between the farmers and the fertilizer men, most of whom, as I have already stated, furnish goods up to guarantee, so far as we have seen, but still would prefer not to be bothered with licenses and analyses.

Take it altogether, then, it seems safer that the farmers should keep this matter in their own hands. The bill has now been discussed for eight years and during four sessions of the Legislature. There are no new developments to justify further changes, and the farmer should see to it that the perfected bill is passed unchanged. They should instruct their delegates to that effect. Above all things, the bill should be put in charge of men who are not only well intentioned and not likely to yield to any kind of suggestion from the opponents of fertilizer control, but also

endowed with the ability to handle the bill through its several phases without losing time to present it ably and forcibly to their colleagues of the Assembly and Senate. Also, to see that it is not gently pigeonholed or put at the bottom of the file on its way through, and does not accidentally fail to reach the Governor in time, or, when it does, is found incorrectly engrossed or lacking the signatures of the proper officers, and has to go back through several committees to be re-referred and perhaps mysteriously disappear. We have seen all these things happen, severally and jointly, during the past four sessions of the Legislature. Forewarned ought to be forearmed the next time; let it not be your fault if they occur again.

## HORTICULTURE.

### Bees in the Orchard.

As a contribution to the current discussion of the relation of bees to fruits, the experience of Fred Buck of Vacaville, as described by the Reporter, is interesting.

Fred Buck has 270 hives of bees. They are, of course, a source of great profit, and on this account should be kept by other orchardists. They get most of their honey from the hills and during the summer up to the first of July find plenty of flowers in the hills from which to secure food. They also gather considerable honey in the fall, the months of September and October being usually the best months of the fall, though some seasons they gather a good deal of honey as late as November. They do not damage fruit in any particular. Mr. Buck keeps his hives in a peach orchard.

But the bee industry is deserving of consideration by orchardists from another standpoint. It has been recognized that the pollenization of the cherry blossoms was a necessity. For the purpose of pollenizing the cherry blossoms, it has been deemed advisable to plant different varieties scattered about, and even to mix the wild cherries about in the orchards. With a good many who recalled the big cherry crops of the past in Vacaville, it has been a matter of bee or not to be. They recall the early days of Vacaville, when the cherry crop was unfailing, and persistently urge that wild bees were then numerous. For one reason or another, mountain fires perhaps as much as anything, the wild bees seemed to desert the valley, and just in that proportion did the cherry crop fall below the normal.

Mr. Buck finds that the bee crop is an insurance of the cherry crop. He says that the season of 1901 gave him the biggest crop of cherries he ever enjoyed, when his acreage was only one-third as large. He also says he had at that time the largest number of bee hives. He is positive that the bees are underwriters of his cherry crop, and will not part with them, because, as he says, no bees, no cherries; plenty of bees, plenty of cherries. He says the bees do no harm to orchards or to drying fruits, except that when pears are being dried their sugary sweetness attracts them and it is found necessary to cover drying pears with netting to keep off the busy bee. Despite this objection Mr. Buck is an enthusiast in the matter of bee culture, and proposes to continue the industry which has been profitable to him directly, and indirectly even in a greater degree.

### Fumigation for Insect Killing.

Many Californians, who first used hydrocyanic acid gas as an insecticide, and at whose hands the method has been most widely used on a large scale, will be interested to know to what an extent and in what various ways the gas has recently been turned to account at the East. Professor W. G. Johnson has just completed a treatise of 300 pages on this subject, which is published in good style, with many illustrations, by the Orange Judd Co. The author holds that in the nursery, fruit and grain industries, fumigation with hydrocyanic acid gas and carbon bisulphide is the only practical method by which insect pests have been combated successfully. This book is the first of the kind ever published on this important subject. It tells how to construct apparatus and how to apply the gases. It embodies the practical experience of the author, the world's recognized authority, as well as the experiences of many others who have successfully used these gases. The subjects treated cover orchard and nursery fumigation; applications in green houses and hotbeds; use in mills, warehouses, elevators, ships, cars, railroad coaches, houses and other places. The book may be ordered from the PACIFIC RURAL PRESS, at \$1, postpaid.

TO LINE a reservoir dug in a hillside of sand and gravel, designed to hold about 20,000 gallons, and not over 3½ feet deep, a cheap and good way would be to tamp a clay and sand puddle all over the bottom and sides at least 1 foot thick. It could be made in two layers of 6 inches each to great advantage in preventing seepage seams by lapping the work. The sand and clay should be mixed in equal parts, stiff and well rammed. When finished the whole surface should be well covered with clean gravel. Freezing will not injure it.



## THE IRRIGATOR.

### Irrigation for the Growth of Fruit.

By C. C. TEAGUE of Santa Paula at the Farmers' Club Institute at Pomona.

If you were to visit Ventura county to-day and see how extensively the people are using water for irrigation on their orchards and farms you would hardly realize that six or seven years ago irrigation was considered (except for citrus orchards and alfalfa) as entirely unnecessary and a waste of time and money; but such was the condition. True, this remarkable change is in some measure accounted for by our shortage of rainfall during recent years, but further than this the sentiment of our people has completely changed. This change has come about through education along these lines and through practical experience in the use of water and carefully studying its benefits and effects. Having been managing an irrigation system since this growth began in this locality, and having had charge of properties which have been large users of water, my opportunities have been exceptionally good for noting the different methods of irrigation used and of comparing results.

**ADVANTAGES OF SOIL DEPTH.**—A large part of our valley has soil advantages which are possessed by few of the localities of southern California which I have visited. Our soil is a deep, heavy loam and is remarkable for the manner in which it retains moisture—in fact, it is practically a reservoir, and when once it is filled up with water, if the ground is properly cared for, it stays there until used. This capacity of soil led many into the error of thinking that deciduous trees did not need irrigation. The tree was planted and kept growing, each year sending its roots deeper and deeper into this reservoir of moisture. This was all very good until the tree exhausted the stored moisture, when the trees began to fail. The average rainfall will only penetrate into the soil to a depth of 5 or 6 feet, and therefore the lower circles of roots were eventually in dry earth. Now, it is a well-known fact that roots of a plant or tree cannot draw nutriment and sustenance from dry earth. Bearing in mind these facts, you will readily see that the result was that the benefit of having a very deep soil was lost when the lower moisture was exhausted. The trees began to fail. Many attributed this failure to old age and dug their orchards up; others began to irrigate, filling up this reservoir and instilling new life into the trees. I have now in mind two orchards, situated side by side. One was very much superior to the other, but both began to fail. The owner of the best one concluded seven or eight years ago that his orchard was too old and dug it up. The owner of the other began to irrigate, and his orchard has been profitable and has improved ever since.

**WINTER IRRIGATION.**—I believe that deciduous trees should be irrigated in the winter, when they are dormant. At that time, if the ground is filled with cold water, the tendency is to keep the sap in the tree from rising too early, thus escaping the liability of loss of crop by frost, which so often catches the early bloom. The walnut groves which were irrigated early in Ventura county last year seemed to do much better than those which were irrigated later in the season. I noticed that many of the trees which were late irrigated began to bud and leaf out very early on account of a warm spell of weather. This was followed by a long period of cold weather, which caused the sap to go down, with the result that these trees did not leaf out until very late in the spring—in fact, some of them did not get into a good leaf until the middle of summer, and when they did finally come out they did not do well during the whole season and bore scarcely any nuts. There were very few of these trees in the groves that were irrigated early and a great many in those that were irrigated late.

While I am a believer in winter irrigation of deciduous trees, I am quite strongly of the opinion that the citrus trees should be irrigated in the winter only when absolutely necessary, for the following reasons: Unlike the deciduous tree, it is not dormant in the winter, but makes some growth and matures the bulk of its crop. Filling the ground full of cold water, which is many degrees colder than the atmosphere and also colder than the soil, is a shock to the tree and has a tendency to make the leaves turn yellow and the fruit color up before it reaches the proper size. I refer more particularly to the lemon, as my experience with the orange is quite limited. However, cold water is preferable to letting the trees get dry, and if I knew that I would be short of water during the summer, and if winter water could be obtained, I think I should use considerable of it.

**IRRIGATION AND RAINFALL.**—During years when we have our average rainfall four irrigations a year is ample for citrus trees, and I am convinced that wherever the supply of water will permit of its use to suit the convenience of the uses good results can be obtained by alternating light and heavy irrigations. For example, a light one to begin with, then a heavy, then a light, etc. My reasons for advocating this are that the first 2 or 3 feet of soil, having so many more roots and feeders, becomes exhausted of its moisture much sooner than the deep soil, and

therefore needs water sooner. Going on the supposition, therefore, that we have had an average rainfall, and that there is plenty of deep moisture, the first irrigation should be light, intended to only wet the top as deep as the upper circle of roots has exhausted it. The second should be much heavier, and the water should be run long enough to replenish the deep moisture, which by this time has become exhausted. The third irrigation should be light, for the same reason as given for the first. These are not theories, but facts, which you can demonstrate with your spade. Speaking of the spade, we always determine when our trees are needing water by digging holes. Many take the foliage of the tree as a guide, but I have always considered it better to apply the water before the tree shows evidences of suffering.

**THE FURROW SYSTEM.**—The method which is coming more and more into use with us is the furrow system, of which I am a strong advocate. It has always appealed to me as being the simplest, best and most effective way of irrigating. When handled properly, one can by this system give just the amount of water that is desired, whether 4, 6, 10 or 12 or more inches, rain measure, to the acre. One great trouble with the flooding system on our heavy soil is that the water does not get evenly distributed, portions of the field getting much wetter than others, which makes it bad about cultivating. The portion which receives the least water dries out and begins to bake, which necessitates beginning cultivating before the wet portions are ready. Great injury is often done to soil by reason of this, as heavy soils will not permit of cultivation while wet without serious injury. On the other hand, the soil after irrigation by the furrow system dries out much more evenly. In preparing ground for irrigation we use 14-inch furrows and make the furrows from 4 to 6 feet apart and as deep as possible. Where the soil is very close, or where there is a hardpan, we sometimes break it up, using for this purpose a plow or long, heavy chisel on our cultivators, running them once or twice in the center of the rows, so as not to injure too many roots.

The mistake most commonly made by those using the furrow system is that of having the head ditches or flumes too far apart. This is where good judgment should be used, as no set rule can be laid down. The distance between head flumes, or, in other words, the distance the water may be run economically in furrows, depends almost entirely upon the character of the soil. In giving a rule for this I have often said that if it takes longer than three or four hours to get the water through from the upper to the lower end of the furrow the distance is too great and should be shortened, because the upper end would get more water than necessary before the lower end received enough. Our practice in starting the water is to be careful and not string it out in too many furrows, but to keep it in as compact a body as possible, forcing the furrows as far as the water will reach as quickly through to the end as possible, afterward shutting down until the water barely reaches the end of the furrow and turning on new furrows as far as the water thus gained will reach.

**CULTIVATION AND IRRIGATION.**—Although the topic assigned me is irrigation, cultivation is so nearly a part of it that I cannot forego, in conclusion, saying a few words on this subject.

It is one thing to know how to irrigate properly and another to know how to keep this moisture for the use of the plant or tree with the least possible loss by evaporation. How often I have seen people buy water and go to the expense of applying it to the soil and then simply scratch the top of the ground, leaving it to bake, crack and dry out. One is very apt to be deceived as to the depth of cultivation when it is done immediately after irrigation, or when the surface is moist, and is apt to find after the surface is dried out that the cultivation has not been as deep as was thought and intended, and in such cases, if one takes the trouble to remove what little loose soil there is on top, he will often find underneath a crust which has cracked and allowed the moisture to escape, to the injury of the crop. I am a strong believer in deep cultivation. In the spring, after we are reasonably sure that the rains are over, we cultivate our ground very deeply, using for this purpose a heavy chisel cultivator, to which are hitched four good, heavy horses. The cultivator is 6 feet in width, but we remove one-half of the chisel, leaving only 3 feet of chisels to four horses, which enables us to get the desired depth, which is from 6 to 8 inches, and I tell you the horses have all they want to do with only 3 feet of chisel. After irrigation, our custom is to first go over the ground with a spring-tooth or common harrow, to fill in the furrows and prevent baking, as we find it necessary to give the surface a shallow cultivation before the soil becomes dry enough to cultivate deeply without injury. When it is dry enough we then chisel deeply, the same as before mentioned.

I do not pretend to say that these methods of irrigation and cultivation are the best for all localities and soil conditions, as that is something that I know nothing about; but I am quite sure that those using these methods in our locality are getting the best results.

## THE DAIRY.

### The Practice of Dehorning.

A Mississippi reader requests information from the Breeders' Gazette on the subject of dehorning, inquiring as to "the most improved and modern methods of dehorning calves and grown cattle." He also asks as to the relative merits of the V-shaped knife and the concave pattern, as to the after treatment, the best time of year for performing the operation, and as to its advisability in his latitude. In answer to the question the Gazette gives a very timely review of the whole subject of dehorning, which will be interesting to our readers.

It would seem that this whole subject has been so thoroughly threshed out in the past fifteen years that few could be unaware of all the facts connected with the removal of horns from domesticated cattle. Surely none is ignorant of the fact that this practice, opposed at first on humanitarian grounds, has come into almost universal adoption where cattle are prepared for the feed lot and also in large numbers of dairy herds. Breeders of the horned types of pedigreed cattle have adopted it only in exceptional cases, as in many instances the absence of horns is made an excuse to discount the price on a pure-bred animal. Objections of an esthetic nature are urged by breeders against dehorning, and most men object to the removal of one of the characteristic features of a breed. These considerations have deterred breeders generally from removing the horns from their cattle. In dairy herds and the feed lot such considerations do not apply, and the innovation of fifteen years ago, decried as inhuman and brutal, has passed into practically a settled policy of stock farm life in a great many sections.

The handsaw was the original dehorner and it is yet used to some extent. It is doubtful if the operation can be better performed by any other instrument when the saw is properly handled. But its use demands time, labor, a good eye and a steady hand and the fastening of the animal's head securely. The clippers are superior in that they save time and labor and when properly made and handled do very good work. One of the original forms of clippers occasionally crushed the horn, which was objectionable, but we believe that neither of the forms mentioned by our Southern correspondent is open to this objection. We have had favorable reports from both of these clippers.

Undoubtedly the best time to dehorn is when the animal is from two days to two weeks old and the chemical dehorners are most easily and satisfactorily used. The other way is to gouge out the horn button. While this latter operation is wholly effective most men dislike the sight of blood and prefer to use a chemical which is comparatively painless in its work but reasonably effective. The growth of the horn button can be easily killed by the use of chemical dehorners so that a smooth hornless head will develop.

No after-treatment is indicated unless the operation be performed in flytime, when a dressing that will keep the flies away should be used. Moderate temperature is better than extremes of either heat or cold, but the time of year need cut no figure if the animal is protected from exposure to the weather and the wound from attacks by flies or other harmful insects. The risk of dehorning is nil. There is no risk unless the operator is grossly ignorant and careless. Oft-repeated tests have shown only a slight shrinkage in the milk in dairy cows from the operation. Two things are essential to successful dehorning: First, to cut close to the head, taking a bit of hair with the saw or knife; second, to protect the wound from exposure to insects. Unless the horn is cut at the matrix—where it comes out of the skull bone—it will grow an unsightly stub. The commonest mistake in dehorning is to cut a little away from the head under the erroneous impression that the operation is less painful and equally effective when thus performed. Quite the contrary is true. At the matrix the arteries and veins extend into systems of capillaries—very small blood vessels—and the bleeding is generally inconsequential when the knife goes through these capillaries, whereas, if the cut is made a little way up from the head a bad hemorrhage and an ugly wound usually result.

Each man must be his own judge as to the advisability of performing this operation on his cattle. Its advantages are thoroughly known and need not be rehearsed. The risk is scarcely worth counting and the expense is comparatively small, and we do not know why it should be less advisable in Mississippi than it is in any other State.

THE evaporative value of the heavy California oils is 17.5 pounds of water evaporated from 212° per pound of oil. Such oils weigh from 7½ to 8 pounds per gallon. Good bituminous coal will evaporate from 9 to 12 pounds of water per pound of coal. On general average 1 pound of oil is worth 2 pounds of coal; 3 to 3½ barrels oil equaling one of good bituminous coal.

A BOARD being 12 feet long and 12 inches wide at the big end, and tapering from both sides to a point, if sawed across 8 feet 5½ inches from the pointed end, would have half the amount of timber contained therein in each piece.



## Agricultural Review.

### BUTTE.

**PROFITABLE CITRUS ASSOCIATION.**—Oroville Mercury: The property of the Oroville Citrus Association cost the original promoters \$24,000. The Association now owns 100 acres all piped for water and drained by means of tile. Seventeen thousand dollars has been received from dividends and the property is now valued at \$100,000.

### GLENN.

**A REMARKABLE ACRE.**—Sacramento Record-Union: Samuel Cleek, of Orland, has, perhaps, the most remarkable acre in California. It embraces a barn and corral, covering 75x75 feet; rabbit hutch, 25x25 feet; residence and porches, 30x30 feet; two windmill towers, 16x16 feet each; garden, 46x94 feet; blackberries, 16x90 feet; strawberries, 65x90 feet; citrus nursery, 98x90 feet, with 2300 trees budded; one row of dewberries, 100 feet long; four apricot trees, two oak trees, three peach trees, six fig trees, ten locust trees, thirty assorted rose bushes, twenty assorted geraniums, twelve lemon trees, seven years old; one eight-year-old lime tree, from which he sold 160 dozen limes last year; eight orange trees in bearing, four breadfruit trees, five pomegranate trees, a patch of bamboos, three calla lilies, four prune trees, three blue gum trees, six cypress trees, four grape vines, one English ivy, two honeysuckles, one seed bed, one violet bed, one sage bed, twelve tomato vines, thirteen stands of bees. After making a comfortable living for himself and his wife off this single acre, Mr. Cleek adds \$400 a year to his bank account.

**A GOOD WORD FOR THE MEADOW LARK.**—Willows Journal: While the farmers are complaining of damage done to their young grain by the meadow larks, they can be consoled by the recent reports of noted entomologists, who find that these birds have good qualities. The Department of Agriculture has made thorough research into the matter and ascertain from hundreds of tests and examinations of stomachs of the birds, that the lark is the best known destroyer of weevil, caterpillars, beetles and a host of small insects, all injurious to the industry of the grain grower.

### NAPA.

**BLACKBERRIES AND WALNUTS.**—St. Helena Star: J. W. Bailey, who recently purchased the old Cruey place on Napa creek, will plant walnut trees on the land. While the trees are small he will utilize the rich soil by producing blackberries.

**FARM HANDS SCARCE.**—Calistogan: Sam Clark of Franz valley was here last Monday looking for laborers to train and tend his hop and blackberry vines. Men who want work, and who are not already employed, are so scarce that Mr. Clark finds much difficulty in getting his work done.

**INCREASED FRUIT ACREAGE.**—St. Helena Star: According to Assessor Meacham's returns for 1901, there are fruit trees of the following varieties in this county: Apple—Bearing, 48,250; non-bearing, 16,480. Apricot—Bearing, 1645; non-bearing, 12,530. Cherry—Bearing, 4160; non-bearing, 12,100. Peach—Bearing, 91,200; non-bearing, 23,860. Pear—Bearing, 47,100; non-bearing, 16,460. Prune (French)—Bearing, 98,480; non-bearing, 78,975; other varieties, bearing, 28,500; non-bearing, 4800. It will be seen by these figures that there has been extensive planting of fruit trees in this county during the past few years, all of which goes to show that farmers are believing more and more in diversified crops.

### KINGS.

**LIVELY WORK DEHORNING.**—Hanford Journal: Frank Griffith, the veterinary, has been extremely busy of late dehorning cattle, having executed that process, by the use of his patent cage, on 1500 cattle in the last month. His advice to all owners of cattle is to have the work done before the flies get bad.

**RELATIVE TO CORN RAISING.**—M. P. Troxler says that he has ascertained that there are two seasons when corn should be planted here—the early season being in March and the late season in June. By planting in March the corn tassels out and pollenization takes place as it should, when a few weeks later the sun is so hot that the process is not completed. Corn planted in June will pollenize after the season's heat has passed. Mr. Troxler says that there is an element in the corn product here that requires a different treatment in the cooking of corn meal necessary in order to obtain the best results. There is more sugar in the corn raised here than there is in the corn raised in the Mississippi valley States, and this fact must not be overlooked in pre-

paring meal for food if the best results are secured.

### LOS ANGELES.

**CORK OAK FOR SOUTHERN CALIFORNIA.**—Saturday Post: The cork oak grows well here. This valuable tree does not grow as rapidly as the pepper, eucalyptus, grevillea, etc., but it does grow here more rapidly than the common trees of the Eastern States grow there. A great deal of the hilly and rolling country in southern California is suited to the cork oak. The tree is a native to countries with a climate similar to ours and thrives on the hilly lands not arable. A number of cork oaks are growing and doing well in southern California. Some of these have reached the fruiting stage and bear acorns. The best known of these trees was in the Alhambra on the Richardson place.

### NAPA.

**LARGE SALE OF GRAFTED VINES.**—Lodi Herald: Mr. Frank Lease of Lodi made a contract with Mr. John Ames of Napa for 24,000 bench-grafted resistant roots, which are to be delivered to him next planting season. They will cost Mr. Lease \$1500. Twenty thousand and over of the roots will be Flame Tokay on St. George Rupestris roots, and the balance, about 3000, will be Black Prince or Rose Peru, on the same stock. This order is sufficient to plant sixty acres, and the largest Mr. Ames has received this year.

### SACRAMENTO.

**FARMERS INSURE THEMSELVES.**—Record-Union: Proceeding under the Act of the Legislature of 1897, which provides for the formation and operation of mutual farmers' insurance companies, about twenty-five farmers of this county have organized under the name of the Sacramento County Fire Insurance Co. Officers were elected as follows: President George Hack, vice-president Joseph Holmes, secretary Joseph Cornell, treasurer Charles Schreiner. Directors, other than the officers, are: N. Lauridson, W. E. Dixon and David Reese. The new company will confine ventures to farm buildings, and no property will be insured for more than two-thirds of the actual value.

**FLORIN FRUIT GROWER ASSOCIATION.**—Bee: At the town of Florin the growers have organized the Florin Fruit Growers' Association with 120 growers. They have 600 acres planted to strawberries. Most of the Tokay grapes of that district are shipped to Eastern markets through this Association. They have 400 acres in grapes.

### SAN BERNARDINO.

**PROFITABLE RETURNS.**—Sun: Mr. Henderson owns fifteen acres of orange-bearing land on the East Bench, and it is as fine fruit-bearing land as Highland can boast of. This season he picked his own crop, packed it under his own label, and from the fifteen acres he realized \$6000, or \$400 an acre. Next season he proposes to do the same thing, only he intends to have a first-class packing house in which to do the work.

**MORE CATTLE ON THE RANGE.**—Chino Valley Champion: The trainload of cattle brought in last week from Arizona by the Chino Land & Water Co. contained about 1000 head. They were branded and at once turned loose on the Chino hill range. The branding of these cattle was an incident in itself. The thousand head were branded in 4½ hours. At one time nine were given the mark in just 30 seconds. This speed was attained by the use of a chute devised by R. C. Steele.

**BIG SHIPMENT OF OLIVE OIL.**—Times-Index: Bloomington is rapidly coming to the front as an olive growing section. The first carload of olive oil ever shipped from the State left Bloomington last week, the shipment consisting of 16,000 gallons of oil, all for the East. The oil is bottled before shipping, and each bottle bears an attractive label marked "Bloomington." The olive mill there will continue in operation another month.

### SAN JOAQUIN.

**IMPORTING FINE CATTLE.**—Stockton Mail: Peter Krog, superintendent of the Pierce Land & Stock Company's Riverside ranch, on Rough and Ready island, is on the way East to secure for that company a lot of the choicest Holstein-Friesians that can be found in the United States. Not a single animal will be purchased that is not of the highest quality. The cattle will be shipped in palace stock cars.

**SUIT INVOLVING A CROP.**—In the Superior Court, at Stockton, Judge Buckles has given an important decision in a suit involving a crop. James Gillis brought action against M. E. Galvin to foreclose a mortgage of \$25,000. One year Galvin raised 9000 sacks of barley, which he placed in the warehouse of the Farmers'

Union & Milling Co., turning it over to Gillis in part payment of the mortgage. A fire subsequently destroyed the grain. Gillis contended that the grain had not been turned over. The decision of Judge Buckles was to the effect that the barley in question was the property of Gillis at the time of the fire.

**MAY REPEAL SHEEP TAX.**—Lodi Sentinel: The Supervisors will hold a special meeting Thursday of this week for the purpose of considering the matter of repealing the ordinance imposing a tax of 5 cents per head on sheep passing through the county.

### SANTA CLARA.

**PULLING OUT VINES.**—San Jose Herald: E. P. Boden reports that he is pulling out the vineyard on the Stanford ranch at Palo Alto—some 60,000 vines. During the present season, he states, he has pulled about 250,000 vines with his machines. In this statement may be seen the terrible havoc wrought by phylloxera and other vine destroying influences in this valley.

**A COLT WITH A FREAK HEAD.**—A San Jose dispatch states that to a local taxidermist has been intrusted the work of preserving for scientific purposes the remains of a remarkable freak from the ranch of Samuel Parker, near Milpitas. It is a colt with a "camel" head and ears, long protruding upper lip and jaws and a single large eye in the center of its forehead. One each side, where the eyes should have been, are slight depressions. Its nostrils were closed, causing its death by suffocation a few minutes after its birth. Otherwise it was a well formed colt.

### SONOMA.

**TWIN COLTS.**—Santa Rosa Democrat: A rather unusual incident occurred at the Asti Colony near Cloverdale Monday night. A mare on the place gave birth to twin colts, male and female. The new arrivals are strong and healthy.

### STANISLAUS.

**BIG PURCHASE OF CATTLE.**—San Jose Mercury: James McDermott of San Francisco has just purchased 500 head of beef cattle for his ranches about Newman, for which he paid \$25,000. He says the cattle business will continue to be as good in the future as it is at present. He bases his belief that prices will continue as at present on the extra demand of the new possessions and the conversion of much grazing land into agricultural.

**A MULE'S COLT.**—Modesto Herald: A freak was born last night at the ranch of W. G. Grummett, near Grayson. The freak is a mule's colt. Mr. Grummett had a large number of reputable people see the mule, and all pronounce the maternity genuine. The colt lived but twenty-four hours, and with the close of its brief life vanished exhibition plans that might have yielded considerable money.

**CHICKENS THAT LAY TWO EGGS DAILY.**—Supervisor Carmichael has developed a strain in the chicken family that may prove very profitable if he succeeds in perpetuating it. The strain has been evolved from breeding and cross-breeding and is a little more Golden Wyandotte than any other. The chickens lay two eggs daily, each of them, a statement to which the Supervisor, the members of his family and his hired man will readily subscribe under oath. "Tony," the hired man, was the first to make the discovery. There are but six hens on the ranch, and only four of this particular strain have nests in the chicken house, the other two nesting in a shed. Daily two eggs are found in each nest in the chicken house, and the observation of every person on the ranch leaves no conclusion other than that these four hens are yielding double tribute.

### SUTTER.

**A YOUNG CYCLONE.**—Independent: A small cyclone visited the western addition of Yuba City a few days ago. It was first seen by Mrs. H. C. Clark approaching her residence, but luckily it shied to the north and played football with a few small chicken houses a short distance from the house; set one weighing several hundred pounds on top of a choice fruit tree; passed on to the barn, took off a large rolling door—10x14 in size—and lifted it in the air about 100 feet and carried it some 75 yards from the building and dropped it. The little terror then passed on, scattered a few brush piles and disappeared in the distance, going northeasterly toward the river. Mr. Clark stated that his barn door was broken into splinters and that it took the assistance of two horses to draw his chicken house off the top of the fruit tree and back to its original location.

**HOGS AS FARM ASSETS.**—Independent: A stockman who was here with hogs a few days ago remarked that the hog was the greatest asset the farmer possesses at present. Fed in conjunction with cattle

this year the hog has brought his owner a good profit. It would be difficult to figure just what corn is worth to a farmer when converted into live pork which sells in the market at \$6, but certain it is that those who have fed hogs liberally, even with corn at 50 to 60 cents a bushel, are well satisfied with results obtained during the past winter.

**A BAD CASE OF SNAKES.**—The ranchers living along the flooded district of the tules are suffering from a bad case of snakes, not in their boots, but in their houses and fields. After the water receded from the land bordering the tule the surface of the ground was alive with snakes of various descriptions, but most of them in a semi-dormant state. In some cases, where the water had got into the houses, the snakes were literally shoveled out before work of cleaning the floor could proceed. The drowsy things had been washed in from the tule basin or washed out of the ground and lodged wherever the water was kind enough to drop them.

**FOOD FOR CHICKENS.**—Sutter County Farmer: At a recent Farmers' Institute the following advice was given on the proper food for chickens: Alfalfa is one of the most effective feeds, but more concentrated foods must be used. The choice in grain foods is practically that which can be bought cheapest, though shrunken wheat is preferable. It contains more of the nitrogenous element than does plump wheat and is cheaper. The oil meals, blood and meat meals are rich foods. Cottonseed meal is the cheapest of the oil meals, and contains 40% of nitrogenous matter; blood meals contain 80% and meat meal 40%. The latter is made by grinding meat, bone and other substances. Fresh meat, when it can be obtained, is preferable, in that it is more easily digested. A certain amount of lime is very essential for laying hens on account of the egg shells. Gravel is a poor substitute and oyster shells and other shells are much better. The water given fowls should be as pure as that we use ourselves. Food of the animal origin is generally better than that of the vegetable. It is better digested.

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### PAGE

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## THE HOME CIRCLE.

## A Small Boy's Ambition.

My brother Fred's the nicest man, so big an' straight an' tall;  
Why, he can do all kinds of things that I can't do at all!  
An' you always hear him whistlin' while he's a-workin' round.  
Sometimes he doubles up his arm an' says to me, "Now, pound!"  
An' when I pound him (awful hard) he only laughs at me.  
When I am big that's just the kind of man I'm goin' to be.

Sometimes when I've been hammerin', an' the nails won't go in straight,  
My brother Fred he comes along an' says, "Why, that's first rate;"  
An' then he takes my hammer an' he taps just once or twice,  
An' all those crooked, bent-up nails go in as straight an' nice!  
An' then he laughs an' picks me up, till I am taller'n he;  
An' when I'm big that's just the kind of man I'm going to be.

Sometimes when I'm playin' round I break things an' feel bad;  
But Fred he comes whistlin' along an' says, "Don't look so sad."  
Then off he goes, an' pretty soon I hear him comin' back;  
An' what I broke's all mended up so ma can't find a crack.  
I don't cry then, but laugh, an' mamma laughs, an' so does he,  
An' when I'm big that's just the kind of man I'm goin' to be.

Once I was sick a-visitin', I guess I was 'most dead,  
But my ma she knew what to do—she sent for brother Fred;  
An' Fred he picked me right straight up an' carried me off home  
So easy in his big, strong arms. An' wa'n't I glad to come!  
An' I was thinkin' all along as he was bringin' me,  
"When I am big Fred's just the kind of man I'm goin' to be!"

—Emma F. Bailey.

## Hetty's Graduating Essay.

"She's writin' it!" cried Ted, as he hobbled in to supper. "I came past her room just now and there Hetty was sittin' with a lot o' books in front of her. 'Hello, Hetty!' I says, but she never looked up. Her cheeks were just as red, an' she was writin' for dear life. Bet a cent she gets the prize, too!"

Mrs. Brown smiled. "I hope Hetty will get it," she said. "I know she can write a good essay, and the money would buy those books she's always talking about. Hetty has a good head and I want she should keep along till we've saved enough to send her to college for a year."

Ted's eyes and mouth grew round for a reply, but just then his father came in to wash his hands. "What nonsense," he said. "That's all it is, this talk about Hetty's goin' to college. Hetty's too fond of her books now, and if I had the money to spare I dunno as I'd send her!"

"Oh, come, pa, don't talk so. You're tired to-night," said gentle Mrs. Brown.

"That ain't the point," returned her husband. "She ought to be down here now helpin' you get supper, stid o' settin' upstairs with a book."

"Taint a book; it's her graduating essay, pa," put in Ted.

Mr. Brown sniffed audibly as he sat down to the table. "That's another piece o' folly," he said, "tryin' to write big about somethin' she probably don't know beans about. Have some mush, ma?"

Hetty, sitting in her little room at the head of the stairs, had heard her father's words. She threw down her pencil and sat staring at the wall. Hetty was an ambitious girl and she did love her books, especially her algebra and geometry. Her cherished plan was to buy books and study herself until she could save enough money for a year at college. But there was more in Hetty's character than her love for books, and as she sat staring at the wall paper her conscience gave her several sharp pricks.

"Father's dreadfully cross," she

said to herself, rocking to and fro very fast. But even as she said it there rose before her mind a dozen things she had allowed her mother to do for her that day, and, last of all, a picture of little lame Teddy hobbling away with his seed catalogue, because Hetty was too busy to bother about gardens.

Her head went down upon the table among the papers. "Father was cross," she thought, "and I do mean to go to college some day. But I know what he means well enough. I was getting to be selfish, but I think he's wrong about the essay. Everybody writes graduating essays, and they oughtn't to be about common, everyday things."

Then Hetty went down to supper. She gave her mother a hug and kiss as they did the supper dishes together, and she helped Ted to make out a wonderful list of vegetables from his gay-colored seed catalogues. Teddy heaved a great sigh as they sealed and addressed the envelope to the seedsman. "It'll be the nicest garden in town," he said. "You shall have the first radish, Hetty, because you like 'em so. And I'm going to send a pumpkin to the fair."

"That's right, Ted," said Mr. Brown. "I'll plow, and you can sow and do the weedin'. No reason why you shouldn't have the best garden in town."

Teddy's eyes shone. "Do you know what my crutches say?" he asked Hetty, as they went out together. "They say: 'Teddy's pump-kin! Teddy's pump-kin!'" And he talked radishes and pumpkins to Hetty all the way upstairs. But Hetty's thoughts were only half on the garden, for her father's words about her essay kept lingering in her mind. She read what she had written before she went to bed, and felt dissatisfied with it. Next morning she read it again and laughed.

"I believe father's right," she said to herself. "I don't know much about that subject, and it does sound as if I was trying to write big. I'm going to write about something I understand." And with a decided nod, she tore up the sheets she had written and threw them into the waste-basket.

Now began serious work for Hetty. She chose a subject within her reach, something she wanted to know more about. She did not write so fast as she had on the other essay, but she read and thought more, and some honest work went down on the white pages. At the same time her father's sharp eyes saw Hetty at work every day about the house, and when he spied her, one hot day, pulling up weeds in Ted's garden, while Ted rested his tired legs in the wheelbarrow, he went off with a grim nod.

"I guess Hetty's all right," he said, "and if she is I'll not say a word against the graduatin' essays, nor keep her from her algibray, neither, though I don't take much stock in 'em."

Ted's garden flourished under his care, and about the time when Hetty wrote the last words of her essay Ted's early peas, radishes and corn were showing their green heads well above ground. Hetty rejoiced with him, but her manner became more and more preoccupied as the end of June approached. Miss Bacon, the principal, read and liked her essay—that was one comfort, and her mother and Ted were never tired of hearing it. She read it to them and she read it in her room; she read it before old Bessy, the horse, who looked around in wild amazement. Finally she put it away in her drawer, but bright visions of the prize danced in her head, as they were doubtless dancing in the heads of all the other members of the class.

At last the great day came. It had rained steadily the day before, but early that morning the sun came out and shone with such radiance that every puddle smiled back and the sky turned the very brightest of blues.

Hetty's pretty white dress, freshly ironed, lay on the bed, with the essay beside it, and Hetty capered about them with a smile as bright as the sunshine itself. Her mother smoothed Hetty's curly hair, helped her to dress, and then Mrs. Brown and Ted walked on toward the school.

"Lock up the house, Hetty!" her

mother called back, "for father's gone to Elmira, you know, and Hiram's off down town."

"Yes, mother," answered Hetty, and as she glanced after them she laughed to see Teddy step in front of the fence and look fondly through the palings at his radishes standing in rows like small green soldiers. "Ted thinks everything of that garden," she said, to herself.

The last little preparations took longer than Hetty had thought they would, and when she was ready she saw by the clock that it was nearly time for the graduating exercises to begin. "I must hurry," she said. Having locked the windows, she was about to lock the back door and hang the key behind the shutter when, over in the garden, she saw a sight that made her stand still and catch her breath.

There stood Brindle, the cross cow, quietly beginning to feed on Teddy's early lettuce. Hetty hesitated a second, then down went her essay, and away she went. "Get out, Brindle! Get out of there! Shoo!" she cried, but Brindle paid no more attention than if Hetty had been a troublesome fly. She lashed her tail a little and went on feeding.

Then she picked up a clothes pole, and with shouts and threats tried to drive the cow away. But the loss of her calf had made Brindle dangerous to meddle with. At sight of the clothes pole she turned and threatened Hetty, with her head lowered and an ugly look. Hetty trembled and dropped the pole, for she was afraid of a cross cow.

Just then the school bell rang. Hetty heard it plainly, and started to go.

"Why, I can't miss the exercises just for a few vegetables," she said to herself. But looking back, she saw Brindle turn, tramp through the lettuce and begin to munch Ted's early peas. This was more than Hetty could stand. A bright thought struck her, and, hurrying across the yard, she disappeared in the barn.

Brindle stood mistress of the field. But, as she chewed the tender peavines, she suddenly heard a sound that made her prick up her ears and lash her tail. It was the cry of her calf. Brindle hesitated, lowered her head and began to eat again, but once more she heard the cry, and this time she could not resist. She turned tail on Teddy's garden and trotted to the back gate. There was Brindle, Jr., tied in the farthest corner of the pasture. His mother forgot the peavines in the joy of having her baby back, and wily Hetty, slipping through the gate which Hiram had carelessly left open, barred it fast and heaved a sigh of relief.

She had won the day, and Teddy's garden was safe, but, oh, the pretty white dress! Hetty gazed down at her skirts in blank dismay. She had thought she was holding them up, but what can one do with a frisky calf to manage? Limp and black around the bottom they hung, with great yellow blotches above to mark the times when Brindle, Jr., had stepped into puddles.

Hetty caught her breath with a little sob, and then she sat down by the essay and buried her face in her lap. There wasn't time to change her dress, and she hadn't another white one anyway. The prize and the books she longed for hung tantalizingly just out of her reach. But her cry was brief.

"Yes, I did it," she said, looking up and shaking the tears out of her eyes, "and I'd do it again in a minute. It would have broken Teddy's heart to have his garden spoiled."

But the tears came into her eyes again as she looked at the essay. Just then her father came around the house. "Hetty!" he cried, as his eyes went from her wet cheeks to her muddy skirts, "whatever have you been doing! Why ain't you at the school?"

Hetty laughed, with the tears still in her eyes. "It's Brindle's fault," she said, and told him the story.

"Taint Brindle's fault at all," he remarked when she had finished. "Why didn't you pin up your skirts?" But he gave her a hearty kiss, and then they looked at each other and laughed.

"Well, Brindle shan't keep me from hearin' it, Hetty," he said. "Stand up there on the well curb and let's have

it. Not that I s'pose it's any great shakes," he added.

It was a funny thing to do, and Hetty laughed again, but somehow this proposal lessened the bitterness of her disappointment. So she mounted the well curb and began. The sun from behind the trees touched her brown hair, and the shadow of the lilac bush crept around and hid her muddy skirts. Her audience of one leaned against the woodshed and chewed grass stems, but as Hetty forgot her surroundings in the well-known words of her essay, he sat up and listened keenly.

"It ain't bad, Hetty," he said as she ended. "I don't think it would 'a got the prize, but it ain't bad," and he clapped her kindly on the shoulder.

Great was the consternation of her mother and Teddy over Hetty's nonappearance at school, and great their amazement at the reason for it. Teddy gave Hetty a great hug.

"Oh, Hetty!" he said, "I think you're the best sister that ever was, if you didn't get the prize."

"Mary Gibson got it," said her mother in answer to Hetty's look. "She had a good essay, too."

"But not so good as yours!" cried Teddy, and then he and Hetty went out to look at his garden.

It was wonderful the way that garden behaved. The peas did not amount to much, and the lettuce never recovered from Brindle's cropping; but the corn and radishes were fine, and never were there seen such pumpkins. They lay there and drank in sunshine and rain until it seemed as if their yellow coats must burst.

One by one they went for pies, but Teddy kept the biggest on its vine. "Don't you tell, mother," he whispered, "but it's got Hetty's books inside of it." And that pumpkin actually kept on growing. People came across the street to look at it, and Hetty and her mother declared that Teddy ate and slept beside it, his pride was so great.

But Teddy shook his head solemnly. "It's going to the fair!" he said, and go it did, and became the observed of all observers, and to have a blue ribbon floated from its fat, round stem.

Still, not until the fair was over did the pumpkin reach its crowning glory; for then it sat upon the Browns' tea table with a huge smile upon its face and a candle inside, surveying Hetty as she sat opposite. And a happier, more surprised looking girl it would have been hard to find, for in one hand she held a check for \$10 and in the other a paper bearing these words:

PRIZE,  
FROM THE PUNKIN, FOR  
HETTY'S GRADUATIN' ESSAY.

—Chicago Record.

"My dear Miss Billmore," sadly wrote young Bankinson. "I return herewith your kind note in which you accept my offer of marriage. You will observe that it begins 'Dear George.' I do not know who George is, but my name, as you know, is William."

Mr. Goodman—There's too much deceitful talk in this world. I think if one man has anything to say about another he should confine himself to the truth.

Mr. Sharpe—But suppose there are ladies present.

"How do you like your neighbors?" "Not a bit," said the woman who was trying a little boy's hat on. "You see they don't like children."

"How do you know?" "They hurt Reginald's feelings dreadfully. When he throws stones at their dog, or plays the hose on their window, they look real cross at him!"

Little Clarence (who has an inquiring mind)—"Pa, what is a 'wise old saw'?" Mr. Callipers—"One that has cut its wisdom teeth, my son?"

"And you declined to marry her simply on account of her birth. What was the matter with it?" "Oh, nothing; only it happened too long ago."



## Distrust.

## I.

It is not the mountain, it is not the land;  
And it is not the deep, wide sea;  
And not the stretch of the desert sand  
Can separate you and me,  
Sweetheart,  
Can separate you and me.

## II.

Hands may clasp and tighten and hold,  
And heart be pressed to heart,  
Yet only shadows the arms enfold,  
If souls have grown apart,  
Sweetheart,  
If souls have grown apart.

## III.

Nor yet the gallop of racing horse  
Can make the distance wide,  
And not the steam or electric force  
Can banish us side from side,  
Sweetheart,  
Can banish us side from side.

## IV.

But the cruel thought, the harsh distrust,  
The word that biteth sore,  
Each from apart could thrust  
So far we could meet no more,  
Sweetheart,  
In this world never more.

—Blanche Nevin.

## Health Value of Scents.

Science at present shows a tendency to turn back to some of the beliefs of the ancients regarding scents centuries ago.

Odorous herbs, notably vervain, warded off the evil eye. The Mosaic ritual is full of hyssop, nard and frankincense. Greece set cinnamon gates to its elysium, and surrounded it with a scented river a hundred cubits broad, which souls swam through and thereby purged themselves of earthly grossness.

Pliny records eighty-five remedies derived from odorous rue, forty-one whose base was mint, thirty-two balms from roses, twenty-one from lilies, bulb and bloom, and seventeen medicaments strong in the virtue of violets. Thus it appears that the violet cure for cancer is among the very new things that surface science scorned because they were so very old.

Now, say various experts, one must choose and use perfumes with an eye, or rather a nose, to health. So it is worth while to set down the properties attributed to various perfumes.

Pure violet essence is said to be especially suitable to nervous people. But it must be obtained from the flowers themselves, not the chemical imitations. Chemically derived perfumes are irritant, poisonous even, to persons of especially sensitive constitution.

True flower scents are obtained in three ways: First, by spreading fresh blossoms upon glass thickly smeared with pure grease, letting them stand in the sun, and, as they wilt, replacing them until the grease is as fragrant as the flowers; second, by repeatedly infusing fresh petals in oil; and third, by infusing them in ether, which is then distilled to a dry solid.

As this solid sells for \$250 an ounce, it is easy to understand why the ether process, though far and away the best, is not commonly used. But the scented grease and the essences made by steeping it in pure spirit are never cheap. After all the scent possible has been extracted from the grease it is still fragrant enough to make the very finest perfumed soap.

All the citrene scents—bergamot, neroli, orange-flower water—are refreshing, and in a degree stimulating, if properly prepared. To make a lasting perfume some animal base is essential—musk, civet or ambergris.

If the base is too strong, it makes the flower scent curiously irritant. People who feel themselves faint in a crowded room are often the victims of several scents simultaneously attacking their nerves. A single odor, no matter how strong, after awhile deadens the olfactory nerves, whereas a combination keeps them active.

Hay fever, which, it is believed by some, arises from the irritant properties of fine odorous pollen yielded by grass and weed fields, is in a way a type of perfume action. Scent parti-

cles in general are not strong enough or acrid enough to set up violent ills. None the less, they have their effect. Witness the refreshment of lavender water when one is faint from heat or crowding. Lavender is peculiarly suited to high-strung temperaments. It is soothing as well as refreshing, without being unduly stimulating.

Jasmine should always be used pure. Alone it tones and braces the whole system, but in almost all of its compounds is singularly depressing. Neroli is the exception. Jasmine and neroli together in faint essence make the scent of scents for all who have hysterical tendencies.—N. Y. Sun.

## DOMESTIC ECONOMY.

## Hints to Housekeepers.

Never put salt into soup when cooking until it is skimmed, as salt prevents the scum from rising.

An embroiderer advises that an old silver thimble worn smooth by long usage is the best to use in work with flosses, which require great care to keep from roughening.

If stoves are put away for the summer, they should be put in as dry a place as possible, in order to prevent their rusting. It is a good plan to leave ashes in the stove, as they will absorb the moisture, and thus help prevent the inside of the stove from rusting.

Butter taffy is an old-fashioned candy of the simpler kind. Boil together one cupful of brown sugar, two teaspoonfuls of vinegar, one tablespoonful of molasses and butter the size of an egg. When it hardens in water, pour into a shallow, buttered pan and, while soft, mark in squares.

Tapestry papers are shown in excellent imitation of the genuine stuffs, but should be used with a discretionary intelligence. They absorb light ravenously and are the poorest of backgrounds for pictures. In a too light room, where it is not intended to have many pictures, they are useful and attractive.

Put all the scraps through a meat chopper; then set over the fire in enough cold water to cover them. Cook until the fat is melted and the water is almost evaporated. Then strain, pressing all the fat from the pieces. Put this away in a cool place, where it will form into a solid cake. When it can be lifted from any water that may have remained in the bottom, put it with any other fat that you may have that requires clarifying, and do it all at once.

The most delicious of all salads is watercress cut from under the ice in any brook where it grows. Even wild watercress, taken from mountain brooks, is nearly as nice as cultivated. Serve the cress on the breakfast and dinner table as a salad. It is far better medicine than any "mess of herbs," which was once prepared regularly for those who were "ailin' in the spring." This is the only salad which, according to all authorities, should never be eaten with oil. Trim it a little, dry it after washing, add a little salt and some pepper, and sprinkle two saladspoonfuls of good vinegar over a small salad bowl of watercress.

Food that has little odor itself and food that absorbs odors readily should be placed at the bottom of the refrigerator. All foods with a strong odor should be kept on the topshelves. Sour milk or cream should not be kept in the refrigerator. Salad dressing, tartar sauce and celery should be covered closely or they will flavor everything

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Hall's Family Pills are the best.

that is shut up with them. Pineapples, strawberries and raspberries should not be shut up in a common ice chest with milk or cream. In the refrigerators where there is a circulation of dry air, butter, milk, cream and other delicate foods may be kept in the lower part of the refrigerator, and the fruits, vegetables, etc., with strong flavors and odors may be kept on the top shelves. If arranged in this way, there will be little danger that one kind of food will absorb the flavor or odor of another.

Five little minutes are all the time Perry Davis' Painkiller needs to stop a stomach ache, even when it is sharp enough to make a strong man groan. Don't be fooled by imitations. 25c. and 50c.

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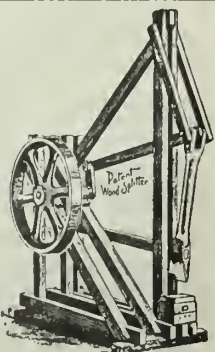
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## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, April 2, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May	July
Wednesday.....	72 1/4 @ 73 1/4	73 @ 74
Thursday.....	73 1/4 @ 71 1/4	74 @ 71 1/2
Friday.....	* @ —	@ —
Saturday.....	71 1/4 @ 70 1/2	72 1/4 @ 71 1/2
Monday.....	70 1/4 @ 71 1/4	71 1/2 @ 72 1/4
Tuesday.....	* @ —	@ —

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May	July
Wednesday.....	42 @ 43 1/4	34 1/4 @ 35 3/4
Thursday.....	43 1/4 @ 42 1/4	35 @ 34 1/2
Friday.....	* @ —	@ —
Saturday.....	42 1/4 @ 41 3/4	34 @ 33 1/2
Monday.....	41 1/4 @ 42 1/2	33 1/2 @ 34 1/2
Tuesday.....	* @ —	@ —

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May	Dec.
Thursday.....	* @ —	1 07 1/2 @ 1 07 1/2
Friday.....	* @ —	@ —
Saturday.....	1 09 @ 1 08 1/2	1 08 @ 1 07 1/2
Monday.....	1 08 1/2 @ —	1 07 1/2 @ 1 07 1/2
Tuesday.....	1 08 1/2 @ —	1 07 1/2 @ 1 07 1/2
Wednesday.....	1 09 1/2 @ 1 09 3/4	1 08 1/2 @ —

\*Adjourned.

## WHEAT.

The market has been inclining against the selling interest most of the current week. Business in European centers was suspended for several days, as is invariably the case there at the close of Lent. In Chicago the bears hammered down speculative values to the lowest point thus far of the current year. May wheat sold on the Chicago Board as low as 70 1/2c per bushel. This is the equivalent of \$1.17 1/2 per cental, and is by no means a low point as compared with values which have been for a long time prevailing in this center. While firmness was lacking here, prices for spot wheat did not decline to any marked degree, the weakness of ocean freight rates, the fair demand for wheat for ships now loading, and the absence of any great pressure to realize on the part of wheat holders, combining to prevent any serious breaks in prices in the local market. The prospects for coming crop in this State are, however, very good for this date, and this has a bearish influence on wheat, more particularly as regards freight rates to Europe, tending to encourage ship owners to hold vessels off the present low freight market and take the chances of securing better figures for ships when the wheat crop now maturing comes forward for shipment. Wheat freights remain quotable at 22s 6d for desirable iron ships to Europe, usual option as to final destination. At the close Eastern wheat markets were firmer, and the market here was against buyers.

California Milling.....	1 12 1/4 @ 1 15
Cal. No. 1 shipping, alongside.....	1 10 @ 1 12 1/4
Oregon Valley.....	1 10 @ 1 12 1/4
Washington Blue Stem.....	1 10 @ 1 15
Washington Club.....	1 07 1/2 @ 1 10
Off qualities wheat.....	1 05 @ 1 07 1/2

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	6s 3 1/4d @ 6s 4d	6s 2 1/4d @ 6s 3d
Freight rates.....	35 @ 36 1/4s	22 1/4 @ 23 1/4s
Local market.....	1 00 @ 1 01 1/4	1 10 @ 1 12 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.08 1/2 @ 1.09 1/2.
December, 1902, delivery, \$1.07 1/2 @ 1.08 1/2.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.08 1/2 @ —; May, 1902, \$1.09 1/2 @ 1.09 3/4.

## LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on March 1st and April 1st:

Tons—	April 1st.	Mar. 1st.
Wheat.....	79,564	80,740
Barley.....	123,853	21,385
Oats.....	6,454	7,353
Corn.....	869	831

\*Including 46,582 tons at Port Costa, 31,266 tons at Stockton.

†Including 16,264 tons at Port Costa, 6,052 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 1,176 tons for the month of March. A year ago there were 104,113 tons wheat in Call Board warehouses.

## FLOUR.

There has been no heavy movement in this product the current week, either outward or on local account. Stocks are of very fair proportions. While quotations continue in same position as previously noted, the market is not firm at these figures. Transfers at full current value are mainly in a small way or of brands enjoying a high reputation with the trade.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

## BARLEY.

Demand has not been particularly active since last review, and the market was not noteworthy for strength, but offerings were of rather limited volume, and little or no disposition was shown to crowd stocks to sale at the expense of making decided concessions to buyers. Values for feed descriptions, as has been the case for some time past, were better sustained relatively than on high grade barley, the proportion of offerings of common or defective qualities being unusually light the current season. Market for feed barley closed strong.

Feed, No. 1 to choice.....	96 1/4 @ 97 1/4
Feed, fair to good.....	92 1/2 @ 95
Brewing, No. 1 to choice.....	97 1/2 @ 1 00
Chevalier, No. 1 to choice.....	1 10 @ 1 20
Chevalier, poor to fair.....	92 1/2 @ 1 05

## OATS.

Buyers are not taking hold freely, contending that prices are at too high a range, but as stocks are of only moderate volume and are mainly in strong hands, there is little opportunity to bear down values or to obtain marked concessions from holders. Arrivals are light in the aggregate from all quarters, and bid fair to continue so during the balance of the season.

White Oats, fancy feed.....	1 40 @ 1 45
White, good to choice.....	1 35 @ 1 40
White, poor to fair.....	1 27 1/4 @ 1 32 1/4
Gray, common to choice.....	1 27 1/4 @ 1 35
Milling.....	1 37 1/4 @ 1 42 1/4
Surprise, good to choice.....	1 45 @ 1 50
Black Russian.....	1 15 @ 1 32 1/4
Red.....	1 22 1/2 @ 1 40

## CORN.

Spot stocks are far from heavy and there are no great quantities offering to arrive. Values are ruling steady for all good to choice corn, but more particularly for desirable qualities of yellow. Damp or otherwise seriously defective corn is not sought after, however, and such cannot be relied on to bring lowest quotations.

Large White, good to choice.....	1 35 @ 1 45
Large Yellow.....	1 35 @ 1 45
Small Yellow.....	1 47 1/4 @ 1 52 1/4

## RYE.

Values remain quotable in about same position as last noted. Another shipment was made to Belgium, the British vessel Pergeline clearing at this port the past week with 32,185 centals, valued at \$30,575.

Good to choice.....	92 1/2 @ 95
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## BUCKWHEAT.

In the way of purchasing from first hands, there is nothing doing in this cereal, so far as reported. Quotations remain as before, but values are necessarily not very clearly defined.

Good to choice.....	1 55 @ 1 70
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## BEANS.

The market has shown decidedly unsettled condition, particularly for most kinds of white beans. Dealers carrying stocks which were bought at comparatively high figures and above the present market have been endeavoring to keep up quotations, but at same time were unwilling to buy at prices anywhere near the figures quoted. In fact, in many instances it has been about impossible to secure bids, dealers simply asserting that they did not care to purchase. This was more particularly the case as regards Large Whites or Lady Washingtons and Small Whites, which were offered in excess of immediate demand. Reds were also difficult to place. Limas inclined in favor of buyers. Red Kidneys and Black-eyes continue in light stock and are being firmly held. Market for Pinks and Bayos is fairly steady.

Pea, fair to good, 100 lbs.....	3 25 @ 3 50
Small White, good to choice.....	2 50 @ 2 75
Lady Washington.....	2 40 @ 2 50
Pinks.....	1 95 @ 2 15
Bayos, good to choice.....	2 50 @ 2 65
Reds.....	2 00 @ 2 00
Red Kidney.....	3 60 @ 3 85
Limas, good to choice.....	3 90 @ 4 00
Black-eye Beans.....	4 25 @ 4 50
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

## DRIED PEAS.

Market shows practically the same condition as for some weeks past, being very

quiet and lacking in strength. Quotable values are nominally as last noted, but are based mainly on the views of holders, in the absence of any noteworthy business.

Green Peas, California.....	1 50 @ 2 00
Niles Peas.....	1 75 @ 1 80

## WOOL.

Spring clip is beginning to come forward from the Southern section in wholesale quantity, and free arrivals from the middle counties are anticipated in the near future. Not for several months, however, is the bulk of the Northern clip looked for. Much of the wool coming forward represents purchases made by dealers in the country, leaving no opportunity for any great amount of trading here. In some instances purchases have been made in the interior at relatively higher figures than are obtainable in this center. Market is firm at current quotations, and demand is good for all wools showing prime to choice condition.

## SPRING.

Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	12 @ 14

## HOPS.

There is no evidence of anything of consequence doing in the spot market. Jobbers are quoting 15 @ 17 1/2c, and would probably pay 15c if the hops were of the finest quality. Some contracting of coming crop is reported as high as 12c for choice Oregon. A New York authority quotes the market under recent date as follows: "While there has not been any material enlargement of the trade, a fair quantity of hops has been moved for the season of year, and a gradual steady wearing away of stocks can be noted. The needs of brewers are such as to keep them constantly in the market, and, while they are buying cautiously, it is evident that they will call for a good many more hops when the brewing season opens. In view of the moderate holdings here and small supplies elsewhere, dealers take a firmer view of the situation than at any time during the winter. State hops are especially short, and many dealers say they have not seen so few of them offering in the early spring for several years past. The country is well cleared, and those who have stocks here are holding for strong prices. It is probable that there would be more business if the goods were available. Pacific coast hops are more plentiful than States, but, with 14 @ 15c asked on the coast, dealers here are not anxious to sell at present quotations—17 @ 18c for choice, and down to 13 1/2c for common of 1901 crop. Yearlings are very firm and have some demand, as there have been several sales of old olds, both here and in the interior."

## HAY AND STRAW.

Market for stable hay has shown a little more steadiness the past week, with less selling pressure and buyers disposed to take hold more freely at full current rates, especially of best wheat hay, for which there has been a quotable advance of 50c per ton. Values for cow hay were fully as well sustained as for some weeks preceding, with no heavy offerings of this description. Straw was in moderate receipt and values for same were fairly steady.

Wheat, good to choice.....	9 00 @ 12 00
Wheat and Oat.....	9 00 @ 11 00
Tame Oat.....	8 50 @ 10 50
Wild Oat.....	8 00 @ 9 50
Barley and Oat.....	8 00 @ 10 00
Alfalfa.....	9 00 @ 11 00
Clover.....	7 00 @ 8 50
Compressed.....	9 00 @ 12 00
Straw, 1/2 bale.....	40 @ 65

## MILLSTUFFS.

Bran was in ample supply for immediate needs and presented a rather easy tone. Middlings and Shorts were held about as last quoted, with stocks only moderate. Rolled Barley ruled steady. Prices for Milled Corn were without quotable change.

Bran, 1/2 ton.....	14 50 @ 16 00
Middlings.....	18 00 @ 20 00
Shorts, Oregon.....	16 00 @ 17 00
Barley, Rolled.....	20 00 @ 21 00
Cornmeal.....	29 00 @ 30 00
Cracked Corn.....	30 00 @ 31 00

## SEEDS.

Mustard Seed is in too light stock to admit of any noteworthy business or to enable giving quotations. Values for Alfalfa remain quotable as before, but there is no great quantity offering and not much inquiry at this date. There is some Flaxseed arriving from Washington, representing in the main deliveries on contracts. Business doing in Bird Seed is light, but at quotably unchanged figures.

	Per ctl.
Alfalfa, Cal.....	9 50 @ 10 00
Alfalfa, Utah.....	10 50 @ 11 00
Flax.....	2 40 @ 2 60

Mustard, Yellow.....	@ —
Mustard, Trieste.....	@ —
Canary.....	3 1/4 @ 3 1/2
Rape.....	1 1/2 @ 2 1/4
Hemp.....	3 1/4 @ 3 1/2

## BAGS AND BAGGING.

There is no change to note in quotable rates for Grain Bags, but it is the exception where stocks are being crowded upon customers. If the grain crop in this State proves as large as prospects now indicate, bags are almost certain to rule higher at harvest time. Wool Sacks are in fair demand and are going at unchanged prices.

Calcutta Grain Bags, buyer June-July.....	6 1/2 @ 6 1/4
Calcutta Grain Bags, spot.....	6 @ 6 1/2
San Francisco Grain Bags, 22x36, spot.....	6 @ 6 1/2
San Quentin Bags, 100.....	5 50 @ —
Wool Sacks, 4 lbs.....	3 @ 3 1/2
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	8 1/2 @ —
Gunnies.....	@ —
Bean Bags.....	5 1/4 @ 5 1/2
Fruit Sacks, cotton, three sizes.....	5 1/2 @ 6, 6 1/4
Fruit Sacks, Jute.....	7 @ 7 1/4

## HIDES, PELTS AND TALLOW.

This market throughout remains practically the same as at date of last review. Wet Salted Hides are quiet. Dry Hides are in fair request at the quoted rates. Pelts are meeting with moderate custom at same prices current for some weeks past. Tallow is commanding steady values, demand being equal to the supply. Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10 1/2 @ —	8 1/2 @ —
Medium Steers, 48 to 56 lbs.....	9 @ —	7 1/2 @ —
Light Steers, under 48 lbs.....	8 @ —	7 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	7 @ —
Light Cow Hides, under 50 lbs.....	8 @ —	7 @ —
Stags.....	6 @ 6 1/2	@ —
Wet Salted Kip.....	8 @ —	6 1/2 @ —
Wet Salted Veal.....	9 @ —	7 1/2 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ —	14 @ —
Dry Kip and Veal, 11 to 16 lbs.....	14 @ —	12 @ —
Dry Calf, under 4 lbs.....	17 @ —	15 @ —
Salted Horse Hides, large.....	2 75 @ —	@ —
Salted Horse Hides, medium.....	2 25 @ —	@ 2 50
Salted Horse Hides, small.....	1 25 @ —	@ —
Dry Horse Hides, large.....	1 75 @ —	@ —
Dry Horse Hides, medium.....	1 50 @ —	@ —
Dry Horse Hides, small.....	1 00 @ —	@ —
Dry Colts' Hides.....	50 @ —	@ —
Pelts, long wool, 1/2 skin.....	80 @ —	@ 1 20
Pelts, medium, 1/2 skin.....	65 @ —	@ 75
Pelts, short wool, 1/2 skin.....	40 @ —	@ 60
Pelts, shearing, 1/2 skin.....	15 @ —	@ 30
Deer Skins, best summer.....	35 @ —	@ —
Deer Skins, good medium.....	— @ —	@ 30
Deer Skins, thin winter.....	— @ —	@ 20
Elk Hides.....	10 @ —	@ 12
Tallow, good quality.....	5 1/2 @ —	@ —
Tallow, No. 2.....	4 1/2 @ —	@ 4 1/2
Goat Skins, perfect.....	30 @ —	@ 37 1/2
Goat Skins, small.....	10 @ —	@ 20
Kid Skins.....	5 @ —	@ 10

## HONEY.

The movement is not brisk. Values are at the same quotable range as previously noted, but the market is not firm. The demand is only for immediate requirements, dealers not caring to stock up ahead at this late date in the season, especially with present fair prospects for a good crop this spring. Fortunately for the producing interest, there are no heavy quantities offering.

Extracted, White Liquid.....	5 @ —
Extracted, Light Amber.....	4 1/2 @ —
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	10 @ 12 1/2
Amber Comb.....	7 @ 10
Dark Comb.....	6 @ 7

## BEESWAX.

Market shows the same general condition as for some time past. Supplies are light and current values are being well maintained.

Good to choice, light, 1/2 lb.....	25 @ 28
Dark.....	24 @ 25

## LIVE STOCK AND MEATS.

The market for Beef has presented a slightly easier tone, offerings showing moderate increase. Veal of desirable quality is meeting with a tolerably prompt custom at full current rates. Mutton brought much the same figure as preceding week, supply and demand about balancing. Spring Lamb sold at a slight decline. Hogs were favored with a firm market, and that they will soon rule materially lower does not appear probable.

Beef, first quality, dressed, net 1/2 lb.....	7 @ 7 1/2
Beef, second quality.....	7 @ —
Beef, third quality.....	6 @ 6 1/2
Mutton—ewes, 8 @ 8 1/2c; wethers.....	8 1/2 @ 9
Hogs, hard grain fed, 125 to 200 lbs.....	6 1/2 @ 6 1/2
Hogs, small, fat.....	6 1/2 @ 6 1/2
Hogs, large, hard, over 200 lbs.....	5 1/2 @ 6
Hogs, soft or acorn fed.....	5 @ —
Hogs, country dressed.....	7 1/4 @ 7 1/2
Veal, small, 1/2 lb.....	8 @ 8 1/2
Veal, large, 1/2 lb.....	8 @ 9
Lamb, spring, 1/2 lb.....	11 1/4 @ 12 1/4

## POULTRY.

There was a fairly active demand for choice young stock, fine Young Roosters.



free from spurs, Fryers and Large Broilers receiving most attention. Some Broilers are being sent in which are entirely too small to be desirable, and such are difficult to place, even at low figures. Old Chickens which were not large and fat met with slow sale. Turkeys did not receive much attention, the demand for this fowl being invariably light at this time of year. Ducks and Geese brought much the same figures as preceding week, but only large and fat young were especially sought after. Prices for Old Pigeons were maintained at last quoted range; Young Pigeons sold at a moderate decline.

Turkeys, dressed, choice.....	15	@	17
Turkeys, alive, Hens, # lb.....	15	@	16
Turkeys, alive, Gobblers, # lb.....	14	@	15
Hens, California, # dozen.....	4 50	@	5 50
Roosters, old.....	4 25	@	4 50
Roosters, young (full-grown).....	6 00	@	7 50
Fryers.....	5 00	@	5 50
Broilers, large.....	4 50	@	5 00
Broilers, small to medium.....	2 00	@	3 50
Ducks, old, # dozen.....	5 00	@	5 50
Ducks, young, # dozen.....	7 00	@	8 00
Geese, # pair.....	1 50	@	1 75
Goslings, # pair.....	2 25	@	2 50
Pigeons, old, # dozen.....	1 50	@	1 75
Pigeons, young.....	2 50	@	2 75

**BUTTER.**

Shipping orders from northern coast-wise points enabled receivers to dispose of considerable of the surplus the current week, and tended to check further declines in prices. Seldom are values at such a narrow range as at present. Common grades, such as are sought after for cooking and pastry purposes, are commanding close to figures current for choice to select fresh, the cheaper kinds being scarce.

Creamery, extras, # lb.....	21	@	—
Creamery, firsts.....	20	@	—
Creamery, seconds.....	19	@	—
Dairy, select.....	20	@	—
Dairy, firsts.....	19	@	—
Dairy, seconds.....	18	@	—
Mixed store.....	16	@	17
Creamery in tubs.....	—	@	—
Pickled Roll, # lb.....	—	@	—
Firkin, California, choice to select.....	—	@	—
Firkin, common to fair.....	—	@	—

**CHEESE.**

Domestic product is in fair supply, and with only moderate inquiry, the market presents an easy tone, especially for new cheese, dealers taking hold of the latter on a "hand-to-mouth" basis, not caring to stand the shrinkage in weight. Eastern cheese is being steadily held, markets tending upward at primary points.

California, fancy flat, new.....	9 1/2	@	10
California, good to choice old.....	9	@	10
California, fair to good.....	—	@	9
California, "Young Americas".....	9	@	10 1/2

**EGGS.**

The speculative demand is the mainstay of the market at present. Large operators on cold storage account are doing most of their purchasing in the interior, and in some instances are paying relatively higher figures than are quotable here. Most of the eggs arriving are showing good quality and prices remain at a narrow range.

California, select, large, white and fresh.....	15 1/2	@	16
California, select, irregular color & size.....	14 1/2	@	15 1/2
California, good to choice store.....	13 1/2	@	14 1/2
California, common to fair store.....	—	@	—
Eastern, good to choice.....	—	@	—
Cold Storage.....	—	@	—

**VEGETABLES.**

There were increased receipts of fresh vegetables of most kinds now in season, and changes in prices were in the main in favor of the consumer. Tomatoes were in fairly liberal supply, principally Mexican product. Asparagus sold at a decided decline from last quoted figures. Rhubarb was mostly bought up by several commission houses, and was firmly held. Onions were in more than ample supply for the immediate demand, were mainly Oregon product, and market inclined in favor of buyers.

Asparagus, # lb.....	4	@	8
Beans, String, # lb.....	10	@	15
Beans, Wax, # lb.....	—	@	—
Cabbage, choice garden, # 100 lbs.....	50	@	—
Cauliflower, # dozen.....	—	@	—
Cucumbers, Bay, # large box.....	—	@	—
Egg Plant, Los Angeles, # lb.....	20	@	25
Garlic, # lb.....	1 1/2	@	2 1/2
Mushrooms, # lb.....	—	@	—
Onions, Yellow Danver, # cental.....	1 75	@	25
Peas, Sweet garden, # lb.....	3	@	5
Peppers, Green, Los Angeles, # lb.....	10	@	15
Peppers, Bell, # box.....	—	@	—
Rhubarb, # box.....	75	@	1 40
Squash, Marrowfat, # ton.....	12 00	@	15 00
Summer Squash, # box.....	1 25	@	1 50
Tomatoes, # box.....	75	@	1 50

**POTATOES.**

Market continued to be liberally stocked with Oregon potatoes, principally Burbank Seedlings, but there were no heavy offerings from any other quarter. While there was no special firmness to the market, desirable qualities were as a rule quite steadily held. Seriously defective stock met with slow sale at comparatively low prices, being offered at 75@85c per sack. Early Rose were in fair request for seed

and were in ample supply for current demand, offerings being principally British Columbia product. Sweets are still arriving from Merced and are in fair demand for this advanced date.

Burbanks, Salinas, # 100 lbs.....	—	@	—
River Burbanks in sacks, # cental.....	1 25	@	1 40
Petaluma and Tomales Burbanks.....	1 40	@	1 50
Oregon Burbanks.....	1 35	@	1 75
River Reds.....	1 40	@	1 50
New Potatoes, # lb.....	2 1/2	@	3 1/2
Sweets, Merced, # cental.....	1 75	@	1 85

**The Fruit Market.**

**FRESH FRUITS.**

Strawberries put in an appearance for the first time from Palo Alto section this season on Saturday last and have since come forward sparingly, selling at 50c@31 per basket, as to quality, but were mostly under ripe. Receipts of this fruit in sufficient quantity to admit of wholesale quotations are looked for very soon. Apples are offering in larger supply than ordinarily experienced at this time of year, but are mostly out of cold storage. The quotable range of values is without appreciable change, but only for choice to select are current values being well sustained.

Apples, fancy, # 4-tier box.....	2 00	@	2 25
Apples, good to choice, # 50-lb. box.....	1 25	@	1 75
Apples, common to fair, # 50 lb box.....	75	@	1 00

**DRIED FRUITS.**

There is little new or of noteworthy importance to record in the market for evaporated and dried fruits. Business is of slight proportions, necessarily so in most kinds, owing to stocks having been worked down to such small compass as not to admit of any extensive trading. The market shows as a whole a rather firm tone, with prospects that stocks of nearly all descriptions will be wholly exhausted before the coming season opens. Trade in nearly all kinds of dried fruit of 1901 crop will be necessarily restricted to small jobbing operations from this time forward. The only noteworthy weakness is for 1900 prunes, which are selling at low figures. The low prices for old prunes are reported to be interfering to some extent with the sale of new prunes, but there are no heavy offerings of the latter and no disposition shown to cut prices, quotations remaining without change. Old prunes of the small size are quoted down to 1 1/2c from second hands. Apples and Apricots are in very light stock and firmly held. Pears of other than the cheaper grades are practically all gone. Peaches are not in heavy stock, are mostly in few hands, and are being in the main steadily held.

**EVAPORATED OR BLEACHED.**

Apricots, Royal, choice, in sacks, # lb.....	9	@	10
Apricots, Moorpark.....	10	@	12
Apples, in 50-lb boxes, rings, pressed, fancy.....	8 1/2	@	9
Apples, 50-lb boxes, rings, pressed, good to choice.....	7 1/2	@	8 1/2
Nectarines, # lb.....	5	@	6
Peaches, unpeeled, fancy.....	8	@	9
Peaches, unpeeled, choice.....	6 1/2	@	7 1/2
Peaches, peeled, in boxes.....	12	@	14
Pears, halves, choice to fancy.....	7	@	10
Plums, Red and Black, pitted.....	5	@	6
Plums, White and Yellow.....	5	@	6
Prunes, 4 sizes, in bags, 3 1/4@3 3/4c; 50-60s, 4 1/4@4 1/2c; 60-70s, 4 1/4@4 1/2c; 70-80s, 3 1/4@3 3/4c; 80-90s, 3@3 1/4c; 90-100s, 3c@—; these figures for 1901 crop.	—	@	—

**COMMON SUN-DRIED.**

Apples, sliced.....	4	@	5
Apples, quartered.....	5 1/2	@	5 3/4
Peaches, unpeeled.....	6	@	6 1/2
Pears, prime halves.....	5	@	5 1/2
Plums, unpitted, # lb.....	1 1/2	@	2 1/2

**RAISINS.**

Movement light as is also the supply. Loose Muscatels are without quotable change. Seedless Muscatels are practically out of stock. Bleached Thompson's Seedless are offering at moderate concessions from recent asking rates.

Following are the prices for 1901 crop in carload lots:			
Loose Muscatels—	Per lb.		
4-crown.....	6 1/2	@	—
3-crown.....	6	@	—
2-crown.....	5 1/2	@	—
Seedless Muscatels.....	—	@	—
Seedless Sultanias.....	5 1/4	@	—
Thompson's Seedless, bleached.....	8 1/2	@	9 1/2
Seeded—			
3-crown, 1-lb. carton.....	7 1/2	@	8
2-crown, 1-lb. carton.....	6 1/2	@	6 1/2
London Layers, 20-lb. boxes—			
2-crown.....	—	@	—
3-crown.....	—	@	—

**CITRUS FRUITS.**

Offerings of Oranges showed decrease, as compared with some weeks preceding, but demand was not particularly active and prices were without quotable improvement. Lemon market was quiet, but for choice to select was moderately firm at prevailing values. Limes were in fair supply and market easy in tone, quotations being reduced.

Oranges—Navels, # box.....	1 25	@	2 75
Mediterranean Sweet.....	1 75	@	2 25
Tangerine, half box.....	—	@	—
Seedlings, # box.....	1 25	@	1 75



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Lemons—California, select, # box.....	2 25	@	2 75
California, good to choice.....	1 50	@	2 00
California, common to fair.....	75	@	1 25
Grape Fruit, # box.....	1 50	@	2 75
Limes—Mexican, # box.....	4 00	@	4 50

**NUTS.**

Almonds are in light stock, mostly in second hands, and are meeting with a fair demand at full current rates. Walnuts are nearly all gone and market is firm for choice. Previously quoted values for Peanuts continue to be maintained.

California Almonds, shelled.....	15	@	18
California Almonds, paper shell, # lb.....	10	@	13
California Almonds, soft shell.....	8	@	10
California Almonds, hard shell.....	5	@	6
Cal. White Walnuts, No. 1 soft shell.....	10	@	11
Cal. White Walnuts, No. 2 soft shell.....	8	@	9
Cal. White Walnuts, No. 1 hard shell.....	9	@	10
Cal. White Walnuts, No. 2 hard shell.....	7	@	8
Peanuts, California, fair to prime.....	4 1/2	@	5 1/2
Peanuts, Eastern, hand-picked.....	5 1/2	@	6
Pine Nuts.....	5	@	6

**WINE.**

The market is ruling quiet, but in the absence of any pressure of consequence to realize, there is no special weakness. Quotable values for dry wines of last year's vintage remain at 22@26c per gallon for fair to choice. Although extreme prices above noted are somewhat above the views of buyers, to purchase freely, full current figures or more would have to be paid. The steamer Leelanaw, sailing on 29th ult. for New York, took as part cargo 274,094 gallons wine. Shipments of fair proportions are being made to the East direct by rail.

**Produce Receipts.**

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	99,551	5,197,150
Wheat, centals.....	378,627	8,343,887
Barley, centals.....	40,514	5,334,901
Oats, centals.....	6,685	737,746
Corn, centals.....	2,167	90,199
Rye, centals.....	33,050	262,526
Beans, sacks.....	5,636	626,488
Potatoes, sacks.....	30,816	1,151,981
Onions, sacks.....	2,728	174,125
Hay, tons.....	2,838	115,408
Wool, bales.....	1,128	45,968
Hops, bales.....	155	8,770

**EXPORTS BY SEA.**

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	29,000	3,694,886
Wheat, centals.....	257,595	7,690,394
Barley, centals.....	230	3,818,456
Oats, centals.....	10	2,750
Corn, centals.....	—	9,205
Beans, sacks.....	88	23,198
Hay, bales.....	72	12,910
Wool, pounds.....	—	545,331
Hops, pounds.....	60	490,237
Honey, cases.....	21	5,973
Potatoes, pack's.....	—	44,220

**California Dried Fruit at New York.**

NEW YORK, April 2.—Evaporated apples, common, 7@8 1/2c; prime wire tray, 9 1/4@9 5/8c; choice, 9 1/2@10c; fancy, 10 1/4@11c.  
California Dried Fruits.—Movement rather slow, but offerings are not heavy, and values in the main are ruling steady.  
Prunes, 3 1/4@7c.  
Apricots, Royal, 10@13c; Moorpark, 11@14c.  
Peaches, unpeeled, 8@10c; peeled, 14@18c.

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it is clearly impossible to so saturate the sheep through the stomach with medicinal substances as to destroy the lung parasites without first destroying the life of the sheep.

Whatever medicinal treatment is used it should be supplemented with feeding compounds or very nourishing food, and by stimulating tonics which arouse the digestive functions and thus assist the animal to eliminate the parasite.

In seasons when the malady is prevalent lambs should not be allowed on low or wet pastures, but if possible put on high and dry grazing grounds. Care should be taken not to introduce infested sheep among a flock.

I quote the following from Brown's "The Lung Worms of Sheep": "It is well known that the infested animals themselves provide the means for the continuance of the parasite which feed on them. A few sheep containing in their lungs the worms which have been described, even though they might not themselves give any evidence of suffering from them, would contribute to a considerable extent to the contamination of the land on which they feed. When the few become hundreds the mischief is proportionately increased. Overcrowding is unquestionably one cause, and an important one, of the contamination of sheep lands, and constant feeding on the same ground is another. Exposure and deficiency of food necessarily induce debility of the system of the sheep, and in this state they become perfectly easy victims to the parasites which infest them. With but few exceptions the disease is found only among sheep that have been on wet lands. Stagnant pools, or even small scarcely noticeable puddles, may harbor myriads of the parasites or ova, ready to take up their residence in a warm blooded animal. It must be obvious that very little will be gained by limiting preventive or curative measures to the diseased animals, while the causes of the disease, both direct and tributary, are allowed to flourish undisturbed."

F. E. TWINING.

Cutter Analytic Laboratory, Fresno. This disease has been in California for decades, and in the old time, when sheep were looked upon as important, it was freely discussed in our columns. During the dull times nobody cared whether the sheep were wormy or not. Recently sheep have risen in favor and their troubles become again important.

#### Loss of Calves.

Dr. W. B. Craig gives the Jersey Bulletin an account of bovine abortion and the modern way of combatting it which will be helpful to our cow keepers who have suffered loss by it. He shows that it is a highly infectious disease and may be carried in almost innumerable ways. It is self-limited; that is, a cow may abort this year at four months, next year seven months, and the third year go to full term. She is subsequently immune from the disease, but has the means of communicating it to others. It may be carried by the bull, clothing of the attendants, stable utensils, etc. It comes most frequently from contact with the discharge or membranes of abortive cows, and it is a very difficult matter to get thorough disinfection.

This disease is no respecter of breeds or barns, and seems to run its course about as quickly under hygienic conditions as in filth. It comes on at first from third to seventh month; there is no general constitutional disturbance in the cow, but there is a reddish appearance of the visible genital mucous membrane. The next cow aborting may come on in the matter of three weeks or a little longer, this period being quite indefinite.

The contagium will stand any amount of freezing, and infected matter retains its virulence for seven or eight months.

See that the drainage is good; sprinkle floor with the following mixture: Corrosive sublimate one-half ounce, hydrochloric acid one-half ounce, rain water two gallons. This is a very powerful disinfectant, but is very poisonous and must be kept away from feed and not allowed to accumulate in

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pools. For disinfection around troughs and wells, use chloride of lime and carbolic acid—one-half pound chloride and one-half ounce acid to gallon rain water. The barn should be closed tightly, whitewashed all over, and formaldehyde gas generated. All this disinfection may be done once a week for four weeks, and once again after a lapse of a month.

As to the disinfection of the cows: The haunches, tail, udder and hind parts should be washed with a 1% solution carbolic acid every day. It is no trouble to do this, and as the contagium enters through the maternal passages it helps to control the disease. Medicines are recommended internally and hypodermically, and it is advisable to

use every means to arrest this disease. Carbolic acid in the crude form, two drams in a bran mash three times in a week, has proven successful, but most are inclined to hypodermic injections of half-ounce, 2% solution pure carbolic acid, in the region of the flank twice a week. I have used the 2% solution, and combined with good disinfection, got control of the disease. Cows that have aborted should not be bred until all discharges have ceased and the cow has had ample time to recover from the debilitating effects.

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For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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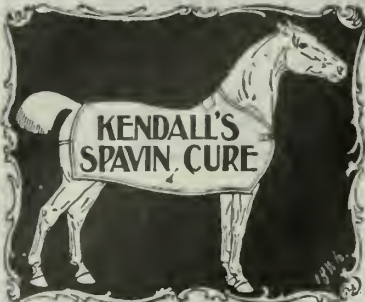
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## FORESTRY.

### Growing Trees in Dry Places.

Hon. Abbot Kinney of Lamanda, Los Angeles county, has written an answer to an inquiry about tree growing which is widely interesting:

My experience in the Sierra Madre foothills is that no exotic tree that I have tried grows satisfactorily in the brush.

The blue gum or Eucalyptus globulus is not satisfactory in our dry foothills. I have one plantation of these in such situation and have got some wood from them, but they have suffered severely from drouth and have not made enough wood to make the experiment a success. The best tree for such situations, as I presume yours to be, that I have actually tried is the Eucalyptus corynocalx, or sugar gum. You can see some of these trees growing along the Sierra Madre road between Lamanda and that settlement. This tree is a little tender to frost, but it is extremely resistant to drouth. Drouth is the thing that we have to meet in the foothills and washes. This tree makes a good growth with a clean bole of wood and can be relied on. It comes from the seed easily, and all you have to look out for is the frost in low places when it is young. These trees should be planted from 8 to 10 feet apart, and in very poor soil probably 12 feet. They should not be planted after they are 6 to 8 inches high. I think it would pay you to consult a nurseryman about the length of time it takes these trees to reach that height. The season in which they are planted would make some difference. If you can get the water, August or September will prove very good months. You will gain just that much time. The trees then get a good start and harden up to go through the winter and commence a vigorous growth in the spring, that is always if your conditions are free from frost, or you can protect the young trees. I think that if the seed were planted in May that they would be ready for fall planting. Twelve inches in height is

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The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION, a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 309 California Street, San Francisco, at 10 o'clock A. M., Wednesday, the 9th day of April, 1902.

I. C. STEELE, President.  
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the maximum at which I would want to plant any considerable number of eucalyptus. They are very rapid growers and obtain a better start when young than when older.

The water required for a young plantation can be hauled in a cart. The sugar gum makes a good hard wood timber that is used in Australia for many purposes other than firewood.

The only other trees that I know of suitable to growth in washes are our own native oaks. These should not be planted farther than 20 feet apart, and you know, of course, they are comparatively slow growers. I have planted a few of them with acorns; but even these trees die of drouth when they are young, if the seasons are not satisfactory. I have thought several times of trying the native spruce that grows along the sides of our canyons in the mountains. It is the conifer that comes farthest down naturally. I have never been able to get enough fertile seed to make the experiment. I think that three of our pines would undoubtedly do well on the heavier soil. These are P. torreyana, the pine that grows along the coast near San Diego; P. sabaniana, the foothill pine, on the Sierra Nevada and the Tehachapi, and the P. monophylla, or pinon. All these have edible pine nuts.

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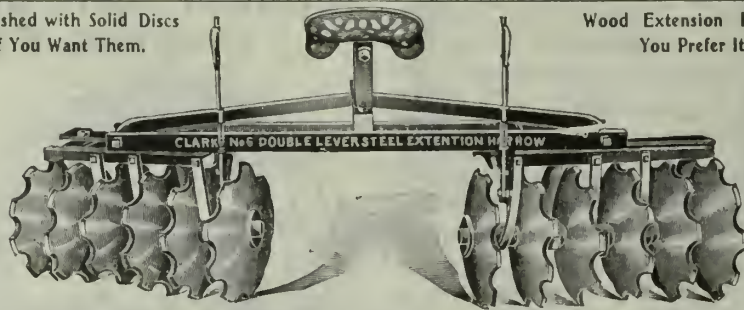
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## FRUIT MARKETING.

### The Prune Combine Cannot Break Away.

A peculiar condition of affairs confronts the Cured Fruit Association, according to a San Jose dispatch to the San Francisco Chronicle. With probably nine-tenths of the members in favor of discontinuing the Association, the legal existence of the organization will continue during the fifty years for which it is incorporated, simply because the sections of the by-laws providing for the closing up of its affairs are impossible of execution. It will also never be possible to again obtain the legal election of officers. It is therefore within the power of the present officers and directors to continue to perform their duties and draw their salaries till the money remaining in their possession, about \$300,000, is used up, when they can assess the members for their continuation in office. The money on hand would enable the present officers and attaches to draw their salaries for thirty years.

President Wood laughingly admitted to-day that such was the condition of affairs, "all because of a stupidly drawn set of by-laws." The Association affairs can only be closed up on a vote of two-thirds of its members and an election held on securing the presence of a majority at the annual meeting. There are 3700 members, and experience has proved that the presence in person or response to a letter cannot be secured from more than 1000, so great is their indifference to the Association's fate. At the last annual meeting the vote of a majority was secured only by adjournment from day to day for three days, until personal persuasion could secure the vote of a majority.

"We shall not," said President Wood, "take advantage of this weakness of the by-laws. I hope in about four weeks to secure all the money coming to the Association from the sale of prunes. We shall then make a statement to the growers and ask their pleasure. While I know it will not be possible to secure a response

from a sufficient number for any legal action, we shall act in accordance with the desire of the largest number. If there is no plan for continuing advanced that seems feasible, I shall remit the balance due the growers to them and resign. When the officers resign the Association will be practically ended, though its legal existence will continue indefinitely."

**MONEY STILL DUE.**—President Wood stated that in round numbers about \$40,000 was due the growers from the 1901 crop and \$250,000 from the 1900 crop. He also said that the steps provided for in the by-laws for closing up the Association and electing a new set of officers would probably be complied with, though they could not expect any action that would be legal.

"Within the past few weeks," continued President Wood, "the attitude of the growers toward the Association seems to be growing more favorable, and we may find some plan for a more limited number continuing with the organization. Could 25% of the growers be secured I would consider it feasible, for we could then be the largest dealer in prunes and could exert a strong influence on the market."

### New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

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- 695,871.—PUMP—Ames & Fulton, Galt, Cal.
- 695,781.—GRADER—J. Bagley, Tacoma, Wash.
- 695,432.—DRAWER OPENER—C. H. Bakeman, Snohomish, Wash.
- 695,801.—CONFECTIONERY MACHINE—W. S. Dillon, S. F.
- 695,546.—SKIRT ELEVATOR—G. V. Egan, S. F.
- 695,453.—HINGE—Rose Frank, S. F.
- 695,807.—THRUST BEARING—Fulton & Ames, Galt, Cal.
- 695,718.—BUILDING CONSTRUCTION—A. Goodman, S. F.
- 695,608.—STAMP CANCELER—J. Guldinger, Los Angeles, Cal.
- 695,600.—RAIL BRACE—J. Jensen, Black Diamond, Wash.
- 695,461.—AX HANDLE CLAMP—L. Johnson, Seattle, Wash.
- 695,815.—HYDRAULIC PUMP—C. Lakenan, Grass Valley, Cal.
- 695,610.—BOILER—C. F. Lake, San Bernardino, Cal.
- 695,818.—SOFA COUCH—L. C. Le Count, Los Angeles, Cal.
- 695,620.—CAN BODY BLANK—J. Lee, S. F.
- 695,745.—DRILL—J. W. Livermore, Berkeley, Cal.
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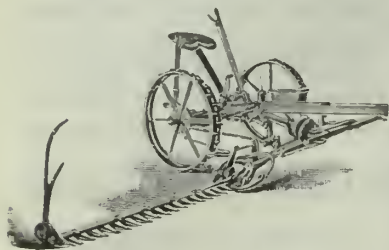
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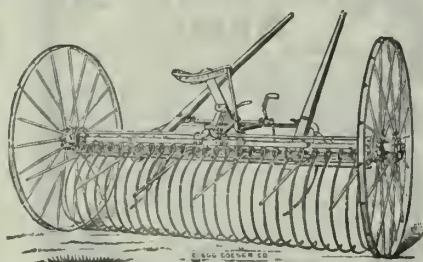
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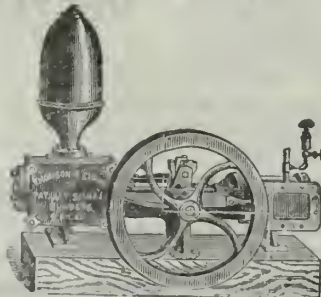
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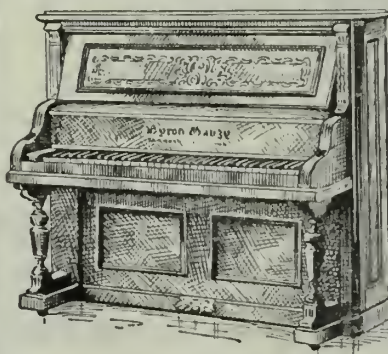
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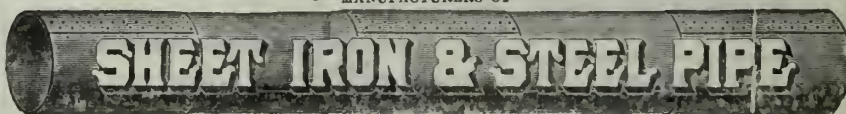
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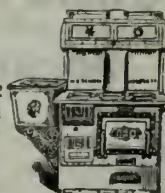


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# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 15.

SAN FRANCISCO, SATURDAY, APRIL 12, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

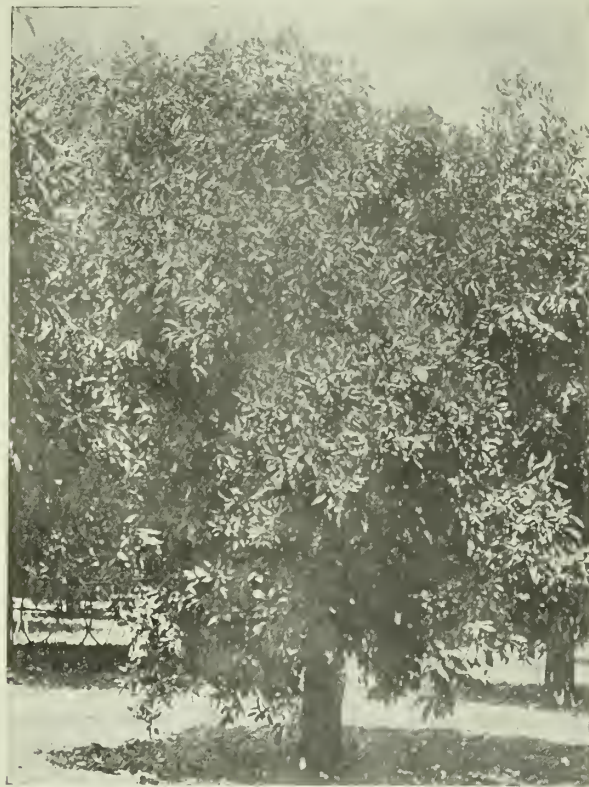
### Budding Over Orange Trees.

In our issue of March 15 we gave pictures and descriptions of the transformation of orange trees by budding. This subject naturally receives much attention from Mr. J. W. Mills in his recent University bulletin on citrus fruit culture, because there is such wide demand for the wider installation of the most desirable commercial varieties and the annihilation of those inferior from this point of view. This same problem prevails wherever oranges are grown in this State, and, as it is still in the budding season, it may be interesting to our readers to pursue the subject a little further. One picture shows how large and satisfactory a tree of a new variety can be had on a thrifty old stump in four years. The other pictures on this page relate to the treatment of the old growth of the tree with reference to the growth of the buds. In one of the upper pictures one tree shows the growth of the buds when the top or the old branches are renewed as soon as the buds in the old bark have taken so well that the waxed bands used in budding may be safely taken off. The result is a larger growth of the buds than when these old limbs are left in place a year and the buds are at the same time making their growth. This growth is

naturally shorter and lighter than if it had all the sap and all the light and heat. But there are other considerations which enter the problem at this point. If the budding is done in the summer and sufficient time elapses for the buds to take, the growth of the new buds is apt to be tender in the fall and to come into the frost season not properly matured to resist low temperatures. Under such conditions, the retention of the old branches and foliage serves to protect the new growth from the frost. The advisability of this



Topped When Bands Were Removed and Twelve Months After.



New Tree in Four Years on Sixteen-Year-Old Root.



Sixteen-Year Seedling With Top Removed and Three Months Afterward.



Growth of Buds When Topped at Budding Time.

protection depends upon the location somewhat, because frosts are of varying severity, and it depends also upon whether the wood of the buds has had time to ripen or not. One of the larger pictures shows a lot of rebudded trees from which the tops were cut away as soon as the buds were set and the new growth had to take its chances. It seems to have done very well, but what might have happened is shown in another plate, where the crown of new foliage is sadly injured by the frost. Wherever there is danger of this



Injury to New Growth by Frost.



Topped One Year From Budding, Buds Having Protection of Old Foliage.

a hint can be taken from the last picture, which shows again the aspect of a tree which had the protection of the old foliage during its frost year. There are other methods of protecting buds than by the retention of some of the old branches. Anything which intervenes between the radiating surface of the ground and the unutterably vast expanse of inexpressible cold in the blue vault above, will prevent the loss of heat into that vasty deep and save the tender growth from freezing—providing the general temperature does not fall too low nor remain too long at a low point. For this purpose leaves of palm trees are often tied into a cover, or other temporary protection is used. Protective measures are costly and troublesome it is true and late budding is avoided as much as possible in frosty places, but between the cost of protection and the loss which follows the freezing back of a lot of thrifty young wood of just the kind you most desire there is no comparison.



# PACIFIC RURAL PRESS

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DEWEY PUBLISHING CO. Publishers

E. J. WICKSON. Horticultural Editor

San Francisco, April 12, 1902.

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## The Week.

Blossom festivals in the bay region have been developed to a greater extent this year than ever before and seem to have many desirable features about them. California city people and Eastern tourists are given new conceptions of beauty and better appreciation of the scope of rural industries and the charm of rural life in California, and both of these ideas are valuable to the individual and to the State. Probably the development fever, which is now running high, is doing much to wake people up to the more adequate appreciation of their environment, but whatever the inciting cause, the result must be voted desirable. We are glad to hear the tributes of the visitor to the beauty of the country and the cordiality of the rural people, and it does the latter good to be awakened to the charms of their own environment, which may stale through familiarity, but revive under the loud exclamations of delight from others. Of course, the declarations of a noontime visitor to a blooming orchard are no measure to establish the desirability or otherwise of rural life, and we all understand that, but still it does a man good to have a fellow-man come into his place, wherever it may be, and say: "It is good to be here." So these blossom festivals are twice blessed, and we can hardly have too many of them.

Speculative wheat has again done its old stunt of letting down during the week and rallying just as the PACIFIC RURAL PRESS goes to press—for the encouragement of the growers, we suppose. And yet it does not quite come to the old mark this time and lacks a little of the figures of a week ago. Spot wheat is influenced a little by the speculative, but is not changed in rate. Little is now offering for sale, and this helps the situation. Three straight wheat cargoes and three of wheat, barley and rye have gone out—nearly \$400,000 worth in all. Ocean freights are now at 23s., and some ships declare their waiting for the next crop. Spot barley is strong and there is a good shipping demand, but futures have declined on crop prospects. Oats are quiet, unchanged and buyers slow. Corn, rye and buckwheat are in much the same state. Beans are not doing quite so well and there is a pressure to sell. Bran is steady and stocks small, but the demand is also very light. Hay is unchanged and the small receipts favor steadiness. Beef, mutton and pork are fairly firm at old prices; lamb is easier. Butter is active, especially the medium grades, which sell close to creamery. There is an active shipping demand northward. Cheese is quiet. Eggs are in sharp demand for storage at last week's prices—perhaps a

shade from on the lower grades. Poultry is in good request for all young and old except the too large supply of small birds which the trade calls "canaries." Choice potatoes are doing even better than before, but onions are weak in the face of large offerings. Australians are offering at cut rates, though they are firm and unsprouted. Asparagus and rhubarb are increasing in supplies, but prices are supported by the considerable Eastern shipping which is being done. Strawberries are more plentiful. Oranges are also increasing in supply, but are firm for the standard sizes, which are selling close to fancy as preferred by retailers. Lemons are unchanged. Limes are still cheap. Nuts are scarce and high. Dried fruit stocks are light except old prunes. Honey is dragging, as there is more pressure to sell. Hops are unchanged. Wool buying in the country is still active and prices seem to be above those quotable in the city, which are largely nominal for lack of supplies to deal in.

It does seem now that dairymen can take a long breath and rest from their long labors to cast the imitation product out of all semblance to the genuine. This has virtually been accomplished, for Congress has passed the law which provides that any person who sells oleomargarine and furnishes it for the use of others, except in his own family, who shall mix with it any artificial coloring that causes it to look like butter, shall be held to be a manufacturer and subject to the tax provided by existing law; that upon oleomargarine colored so as to resemble butter a tax of 10 cents a pound shall be levied, but upon oleomargarine not colored the tax shall be  $\frac{1}{2}$  of 1 cent per pound; that upon adulterated butter a tax of 10 cents a pound shall be levied, and upon all process or renovated butter the tax shall be  $\frac{1}{2}$  of 1 cent per pound. The manufacturers of process or of renovated or of adulterated butter shall pay an annual tax of \$600, the wholesale dealers shall pay a tax of \$480, and the retail dealers a tax of \$48 per annum. The enforcement of the law lies in the revenue department of the general government, and legitimate producers will no longer have to pursue it. Another very important provision is that oleomargarine and kindred products shall be subject to all the laws and regulations of any State or Territory or the District of Columbia, into which they are transported, whether in original packages or otherwise. The new law compels the oleomargarine tub to stand squarely on its own bottom, and that is what the dairyman has always contended for.

Many Californians will hear with interest of investigation into loco weeds which an exchange attributes to Prof. E. Sayre of the University of Kansas. It says that he has demonstrated by eating the plant in a concentrated form that it does not have its peculiar effect upon man, and for that reason no remedy can be ascertained without practical experiment in the field with the cattle themselves. He attributed the disease "locoism" to the mal-nutrition of the weed and is endeavoring to establish an experiment station, where the effects can be scientifically studied. No further beneficial results can be obtained from a chemical analysis of the weed, as the poisonous qualities of the loco seem to only affect certain animals. By feeding cattle or horses the weed under different conditions, the professor thinks the proper preventives can be discovered of some remedy for the digestive conditions of the horses and cattle, which are susceptible to the dreaded disease.

In view of our abundance of feed and water all through California it is distressing to hear from Colorado that many cattle on the plains are in a pitiable condition for want of water. Many of the water holes in Morgan county have been fenced in by owners of small herds, and other cattlemen, whose stock is shut off from water, are threatening to take retaliatory measures. Much ill feeling has also been excited among owners of range cattle by the impounding of animals, said to be in need of water, by officers of the humane society. Snow and wind storms have prevailed and heavy losses among the weakened range cattle are feared.

The raisin people have had a grand time this week trying to settle their differences, and the war does not seem to be over yet. A reorganization has been effected by the election of a new board of directors,

and they have organized with the following officers: Robert Boot president, T. C. White vice-president, A. L. Sayre of Madera secretary, D. D. Allison treasurer, and A. V. Taylor of Hanford chief inspector. For the present no general manager will be chosen. The board decided to draw equal salaries as directors, and not the special ones for particular executive officers. Mr. Kearney, it is understood, will proceed to organize growers' packing houses in the various raisin districts. He has issued an address to the growers and says that the past campaign has only been a skirmish, and that the real fight is now on.

The Grange does wisely in proposing an active campaign for popularizing and extending its organization. Certainly the times seem ripe for it and we hope it will be able to strike an up-to-date gait to the goal desired. At a meeting of the executive committee in this city during the present week it was decided to adopt officially a plan previously suggested for the organization of new local Granges, and work on this line will begin at once. The State Grange will meet at Sacramento during the first week of October next, and the executive committee devoted a good deal of time to the perfection of details affecting this meeting. It is proposed to make it a gathering that will be thoroughly representative of the agricultural interests of the whole State. It is likely that the Grange will become a factor in the work, recently undertaken, of developing northern and central California, and this may be good in its effect upon the awakening of the organization as well as in the promotion of the State. The Grange can learn something from the progress of the affiliated farmers' clubs of southern California, which are now the greatest thing in agricultural organization which we have in the State, and they are still advancing.

It is reported from Los Angeles that last week the orange shipments over the Santa Fe were the heaviest that have been made from southern California since early in the season. The rains and cold weather following retarded ripening of oranges, but the past two weeks of warm weather has perfected the fruit for market. On Saturday ninety-six cars of oranges were sent East over the Santa Fe and as many over the Southern Pacific.

## Arbor Day in California.

In answer to an inquiry from the East, the PACIFIC RURAL PRESS remarks that Arbor Day in California exists as a sentiment, but not otherwise, because California has no Arbor Day, neither by statute nor gubernatorial designation. Perhaps one reason why such a public institution has never passed beyond the ethereal stage in California is found in the fact that the first conspicuous appeal for it consisted in practical sentiment wholly divorced from local horticultural wisdom. Poetical sentiment is not conditioned upon practical sense; and so, when such sentiment broke forth nearly two decades ago, it was easily recognized, from a horticultural point of view, as a sort of midsummer madness. But the general public has not the horticultural view-point and was enraptured with the idea of covering the naked slopes of the islands in San Francisco bay with hundreds of acres of verdure. The newspapers churned the tree-planting sentiment to a passion; and as passion illy brooks delay, the most earnest appeal of the horticulturist for popular patience, until the proper time should come for tree planting, only secured a brief and insufficient postponement. The poetic sentiment burst forth in July.

The appeal to wait for the winter rains sent the poets to their rainfall tables and there they found that rains begin in September—not a moment later then could passion hold itself in check. Hundreds of people carrying thousands of trees went forth to the arid slopes, tore the tender seedlings from the moist soil of the propagating boxes and plunged them into the hot dry earth of the hillsides, where they all quickly perished, for in the bay region of California the September sun is the fiercest of the dry season, and that year no rain came to give the little trees even the faintest chance for life. Of all the thousands that were planted not a single tree lived a month.

This ill-starred undertaking was in the full eye of the State. Of course the horticulturist knew that



the misfortune was only due to the divorcement of sentiment from local common sense and was, therefore, not chargeable to any falsity in the sentiment as such. The ordinary person, however, saw nothing in the event but failure and grew weary of the whole proposition as impracticable. This experience had a very depressing effect upon the idea of tree planting as a popular or community effort, and though those who led the excursion have since learned how to plant trees in California to make them grow and have demonstrated their greater practical knowledge by many acres of young forest of their own planting upon property of their own, the memory of their wrong leadership in public planting has not wholly faded away.

Other reasons why California has no institution of Arbor Day are corollaries of the foregoing. Our State cannot join the Eastern States in a springtime arbor day, unless the transplanting be restricted to evergreens taken from pots or balled plants from the nursery rows. The whole deciduous class of trees and shrubs is in full leaf before March or April, except on the mountains. Our State has also difficulty in finding a day of our own suitable in the different regional climates. Our planting season for deciduous growths extends from December to March; earlier toward the south and the interior valley regions; later toward the coast and towards the north. Soil condition for planting arrives also at different dates according to local soil character and situation. If the time ever comes when popular sentiment demands an institutional planting day, it may be that Washington's Birthday will be chosen. Toward the close of February there is a nearer approach to wide prevalence of planting condition for all kinds of trees and shrubs than at any other single time. In the drier parts of the State moisture enough remains and in the wetter parts the excess of cold rainfall has usually passed away. And yet even this date, which is widely acceptable along the coast and in interior valleys, may dawn upon mountain valleys still beneath the snow mantle. There is perhaps wisdom in the suggestion which comes from the East that in each district trees shall be planted whenever local conditions favor success, and that there be an institutional Arbor Day when sentiment can reign supreme and eloquence flow, unchecked by thought of the fate of the plantation. Upon such a day poet and horticulturist can embrace each other in fervent joy that the trees have been planted, and each may have his own reasons for the gladness.

QUERIES AND REPLIES.

Spring Treatment for Canker Worms.

TO THE EDITOR:—Please state the best known remedy for destroying the canker worm that works on the French prune trees and also the apricot trees during the month of April.—C. W., Napa county.

At this time of year, after the canker worm moth has succeeded in laying her eggs upon the twigs of the trees, there is no recourse except to poison the foliage with Paris green and in that way destroy the worms as fast as they hatch and attempt to eat the leaves. Recent experience shows that Paris green to be really effective should be used at the rate of one pound to 100 gallons of water and applied with a good force pump in a fine spray. Some growers have used one and one-half pound of Paris green to 100 gallons of water with good results on the prune and apricot trees while the foliage is young. Peaches and cherries cannot endure so strong a spray, but these are not usually attacked by this pest.

Growing Stock Beets.

TO THE EDITOR:—Please inform me in your next issue what month in the year is the best time to plant the mangel wurzel or any other of the stock beets. I should like to know if they will do well planted as late as June. How will beets do on adobe or land that is mixed with adobe? What distance apart should the rows be for the stock beets? What is the best book published treating on the culture of stock beets?—A SUBSCRIBER, Wheatville, Fresno Co.

You can start beets whenever the soil is moist enough to germinate the seed and support the plant. It is true there is on heavy soils in regions of the largest rainfall an excess of water and a lack of heat, both of which are against the success of the seed; but on the lighter soils in the warmer, drier parts of the State, beets can be successfully sown all winter

Summer sowing is also successful providing there can be moisture kept in the soil by early spring plowing and subsequent cultivation until sowing time. Summer sowing is also practicable on irrigated ground and on low moist bottom land. Beets sown in July with favorable soil conditions will be ready for feeding stock through the following winter. Summer-sown beets, unless on naturally moist land, must have some fall irrigation. Rows should be straight and about 3 feet apart to allow room for cultivation while the beet enlarges. The beets should be thinned out to a foot and a half or more apart to give them room enough in the row. Beets can be grown on any good soil if well cultivated. Even what you call "adobe" in your part of the valley is not too heavy for them. The only book which gives California methods with these crops is our "California Vegetables in Field and Garden."

For Pear Scab.

TO THE EDITOR:—I have just acquired a pear orchard that ought to have been sprayed with salt, lime and sulphur, but now I will be compelled to use Bordeaux, with which I am not very familiar, always having depended upon salt, lime and sulphur. I wish to know how to use Bordeaux to prevent scab on pears, using it at the same time with Paris green for codlin moth.—HOWARD REED, Marysville.

The combination of Paris green and Bordeaux is now widely used for just the purpose you have in view. The following formula for Bordeaux is safe: Lime, 4 pounds; bluestone (sulphate of copper), 4 pounds; water, 40 gallons. Use part of the water to slake the lime and dissolve the bluestone, which should be done in separate vessels. The bluestone must not be dissolved in a metal vessel. If put into a bag and suspended near the surface of the water it will dissolve more readily, or hot water may be used in making the solution. Both the slaked lime and the dissolved bluestone should be allowed to get cool. Pour the whitewash very slowly through a wire screen into the copper solution. Stir the mixture thoroughly and add enough water to make forty gallons in all. Now add Paris green at the rate of four ounces to forty gallons of Bordeaux mixture. Stir occasionally while applying as a spray to the trees. In the preparation of the Bordeaux mixture it is necessary that the ingredients should be mixed in a wooden vessel. If an iron vat is used the copper will go to the iron and the effect of the spray is largely neutralized. Apply the remedy cold and as soon after it is prepared as possible. It should be freshly made each day.

Brome Grass.

TO THE EDITOR:—Kindly state in your paper if brome grass is anything like Johnson grass: how to plant it, and what it is used for. Is it adapted to the San Joaquin valley?—SUBSCRIBER, Turlock.

Brome grass is a good winter growing grass, and on bottom land or with a little irrigation on uplands will keep its life in the root during the summer and start new growth in the fall. It will not live through the summer on the interior plains without irrigation. So far as these limitations go it is adapted to the San Joaquin valley. It is a fair pasture grass and is good for winter pasture while alfalfa is dormant. It is not like Johnson grass: it has no running roots.

Advice Wanted on the Guava.

TO THE EDITOR:—I should like very much to know when to trim my guava bushes so as to have them bear when guavas are bringing a good price, instead of having them when there is plenty of other fruit in the market. The bushes are from 8 to 12 feet high, and one-half of them are just ready to bloom while the other half show no signs of blooming, evidently having been trimmed at a different time. I have recently come into possession of this place and have no knowledge of the guava. Is it not advisable to trim heavily so as not to have so much fruit and so small, or would you advise plenty of water and plenty of fertilizer and cultivation?—SUBSCRIBER, San Diego.

We are not informed upon advanced policies with the guava along the line indicated by our correspondent. California has only proceeded with this fruit so far as to apply to it the general principles of securing well-shaped and thrifty bushes, and has so far as we know been content to take the fruit in its natural season, which is rather a long one, if the local temperature conditions admit of growing the hardy strawberry guava and the more tender kinds as well. It is, of course, possible to change the bearing sea-

son somewhat, as with other evergreen trees, by pruning so as to force out new growth later than usual, but we do not know how much can be done in this way nor whether it is worth doing. Some reader has perhaps been experimenting in this effort and will tell us his conclusions. The set of fruit can be limited by removing part of the bearing twigs after they can be seen to be carrying too great a load, or individual fruits can be removed as is done with other heavy bearing trees when the extra work is found profitable. But who will write us an account of the guava on the bases of his own observation and experience?

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending April 7, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The weather during the week has been warm and favorable for crops of all kinds. Frequent showers have occurred in nearly all parts of the valley, and heavy rain fell in the northern portion Sunday. Grain is rapidly regaining color and making good growth. Winter wheat on the bottom lands is in much better condition since the rain. Prospects continue good for heavy crops of wheat and barley. Work in hop fields is progressing favorably. Green feed is abundant and of excellent quality. Pears are in full bloom at Wheatland and Guinda. Almonds are said to be dropping in some places. The present outlook is good for heavy crops of cherries, plums, peaches and pears. At Vacaville apricots are now as large as almonds. Citrus fruits are in good condition; oranges have commenced blooming in some places.

COAST AND BAY SECTIONS.

Warm weather has prevailed during the week, and conditions have been very favorable for all crops. Light showers have fallen at intervals, and heavy rain fell Sunday and Sunday night, with high southeast winds. Grain and grass have made rapid growth and are in excellent condition. There are some reports of a short yield of grain in portions of San Benito county, but most correspondents state that prospects were never better for heavy crops of wheat, barley and oats. One small field of barley near San Luis Obispo has been harvested with good results. Work is progressing in hop fields, orchards and vineyards. All deciduous fruits are doing well and give indications of a heavy yield, no injurious frosts having occurred thus far. Citrus fruits are in good condition.

SAN JOAQUIN VALLEY.

The weather has been slightly warmer than during the preceding week, with cool nights and late frosts in some sections. Light rain fell in nearly all sections on Tuesday, Wednesday and Sunday, and hailstorms occurred on the 1st inst. at Fresno, Parlier and Del Rey. Grain continues in good condition and is making rapid growth. Some reports indicate that the acreage in wheat is much larger than last season's, but that the yield will be smaller, owing to scarcity of early rain. Barley is heading out in some places. Alfalfa harvest will begin in a few days in Fresno county. Potato planting has commenced. Green feed is plentiful. Irrigation water is reported scarce in Kern county. Pears, prunes, peaches, cherries and apricots are in full bloom; heavy crops are expected. Vines are about two weeks late.

SOUTHERN CALIFORNIA.

Warmer weather has prevailed during the week and conditions have been favorable for all crops. Light rain fell in some sections on the 1st and 6th. Grain is in good condition and growing rapidly; some of the early sown has commenced heading. With the average April rainfall, there will be good crops of wheat, barley oats and hay in nearly all sections. Green feed is plentiful and stock are doing well. Sugar beets are coming up, and thinning is in progress at Santa Maria. Early vegetables are in market. Orange trees are in bloom at Azusa and Anaheim, and young fruits are appearing on citrus trees in San Diego county. Apricots and peaches are in bloom and walnut buds are opening.

LOS ANGELES SUMMARY.—Good growing week, but warm sunshiny weather would advance crops and fruits much faster. Complaint that some deciduous trees are backward in blooming; weather too cool.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, April 9, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	.....	44.58	37.11	64	42	
Red Bluff.....	1.32	29.71	23.68	21.86	68	42
Sacramento.....	.72	16.28	17.50	21.08	70	46
San Francisco.....	.22	17.35	18.99	22.93	64	48
Fresno.....	.18	6.40	10.39	11.06	74	38
Independence.....	.10	4.23	5.81	5.26	74	30
San Luis Obispo.....	1.36	21.18	27.87	16.29	76	36
Los Angeles.....	.07	10.44	14.18	16.21	72	42
San Diego.....	T	5.85	10.65	7.33	70	48
Yuma.....	.60	.68	3.60	2.80	92	46



## HORTICULTURE.

### Preventing Blue Mold in Handling Oranges.

By MR. E. L. KOETHEN of Riverside at the Pomona Club Institute.

When assigned this topic the writer had little realization of the importance that may be attached to it, but a bulletin just at hand from Berkeley, No. 139, "Orange and Lemon Rot," by C. W. Woodworth, makes it very clear that the rotting of oranges is usually due to a mold fungus known as "blue mold," which grows through the tissues of citrus fruits, breaking them down and causing decay; yet the author does not go into detail as he might, in instruction as to how to avoid the conditions conducive to the growth of the fungus, otherwise this paper would not be necessary. To read the bulletin would be sufficient.

Mr. Woodworth says "that the spore of the fungus (in order to cause infection), must rest on or near the surface of the fruit. It may be carried by the wind, or by touching decayed fruit upon which the spores are being produced.

"That sufficient water be present upon the surface of the fruit to cause the germination of the fungus. That the right condition of temperature must exist. The reason that the navel end is particularly liable to attack of the rot fungus is that, in case a drop of moisture finds its way within this structure, it is less liable to evaporation, so favors the germination of any spore that may have lodged there. In the use of refrigeration, it should be clearly understood that the cold temperature is likely to condense a large amount of water upon the fruit, and as soon as the temperature is allowed to rise to the point where the fungus can grow the conditions are favorable. In any case the presence of water upon the fruit is always essential for the entrance of the fungus, and if fruit taken from the refrigeration is immediately thoroughly dried by arranging for sufficient ventilation, there would be no greater susceptibility on account of the cooling."

**DEDUCTIONS.**—Now from these extracts it is clear that moisture on the fruit is essential to the development of spores that already exist on the surface of the fruit, and that the spores should be kept from the fruit as far as possible.

It is also clear that the drier the orange, and the drier the rind of the orange at the time of taking to the packing house, the less liability there is to favor the growth of rot fungus.

It is a self-evident fact that an orange picked while the dew is on it, or just after a rain, while wet, will carry more moisture with it into the box, and thence to the packing house, and thence, unless ventilated with extra care, in the car, than if picked when dry. In the same proportion will it be found that oranges picked when the atmospheric conditions are humid, not only in the orchard, but also in the house and car at time of packing, will be subject to more condensation of moisture upon the surface in the sweating process, than in dry weather. Nor would we be surprised should it be found that oranges picked immediately after irrigation are more liable to heavy sweating after picking.

It is also likely that after rains and irrigation the oranges are softer and more liable to injury from bruising. Some of these points need further investigation and are fit subjects for our clubs to take up and experiment on carefully, to arrive at definite conclusions after numerous tests.

The foregoing would point to the necessity for greater care in picking fruit (namely, when dry), and in covering fruit left in the orchard after picking on dewy nights, if not hauled to shelter immediately. Also to the necessity for great care in drying the fruit after the sweating process and before packing.

I do not think Mr. Woodworth intends to infer that this is the only cause of decay. For there is the black spot in the navel end that appears to be entirely distinct from the blue mold.

**A LESSON.**—Fortunately the above facts are in accord with the experience of the best packers, but Prof. Woodworth gives the causes, and better work can always be done when it is done with intelligence. In days gone by it was axiomatic that a clean wound bound up in its own blood, and undisturbed, would heal faster than if kept dressed by the known remedies of the day. Now we know that the reason of the success of the healing process in those cases was due to the antiseptic condition of the wound, and now the surgeon reproduces that condition in all wounds, because he knows the reason why. Perhaps our packers will be able to do better on this line, since they know the principle upon which they are working, and the grower is even more to be congratulated on acquiring the facts, because he needs to revolutionize his methods to some extent in order to deliver his fruit into the hands of the packer in the best possible condition. To this end let the grower pick his fruit when it is dry and solid. Keep the boxes of fruit in the shade and as cool as possible until deposited in the packing house. See to it that no fruit with visible decayed spots are placed in the boxes, and as the fungus spores find lodgment in injured surfaces of the oranges, that the pickers

handle them carefully in small picking sacks or cans, and that they do not pitch them from arm's length into the sacks as is often done by those who are trying to fill many boxes per day. The bulletin suggests that the orchardists gather up fallen fruits and dispose of them in such a way that the air may not become impregnated with the spores.

Then in the packing house some reforms may be instituted. Picking boxes, packing houses and fruit cars can be sulphured and scrupulous cleanliness practiced in order to prevent the production of disease spores. Finally, at the other end of the line, greater care should be practiced in order to perfectly ventilate the fruit after the car is opened. It may well be that the blue mold is on the increase, from lack of observance of these precautions.

### Small Fruit Growing in Orange County.

Mr. J. R. Wilson of Santa Ana recently gave the local farmers' club his experience in berry growing in California, which he finds quite different from what it is in Minnesota, his former home. He said:

I have been trying the last five years to learn the California ways of farming. Some of them I like and some of them I do not like and do not practice. I was told when I came here that the proper way to plant strawberries was to make a ridge or bed 3 or 4 inches high and 2 feet wide and plant a row of berries on each side. Now, I don't like that way. I think it is all wrong. In doing that way you can not wet the ground between the rows; it gets dry and hard, and the work of caring for them has to be done by hand with the hoe. I think the best way is to plant in single rows 4 feet apart, or far enough to give plenty of room to cultivate between the rows, and keep the ground as near level as possible and as smooth as possible during the summer months to hold the moisture. I have tried six varieties of strawberries. I think the Lawton Noble and the Arizona Everbearing the best all-around berries we have for the country.

I also have five varieties of raspberries—the Cuthbert, Child's Everbearing, Hansell, Golden Queen and Miller Red. The first two varieties, I think, are the best. Child's Everbearing is a new berry, but one of the best I know of. It has a large red berry, perfectly hardy and a prolific bearer. I also have the Loganberry. It is one of the best for canning. Some say they should not be pruned back, but I think they do. They are a strong grower and will grow 15 feet in one season. Last year I cut part of mine back and part I did not. Those I cut back, I think, bore the heaviest. I think they do just as well to let them run on the ground; but I intend to trellis mine 1½ or 2 feet from the ground for convenience sake; can cultivate and irrigate better. I have the Mammoth blackberries that I planted last year; have had no berries from them yet. The vine is pretty much like the Loganberry, and I think they are of the same nature. I also have the Early Ohio Black Cap raspberry, the Lucretia dewberry and the Austin dewberry. Some call them the Mortgage Lifter. The last three varieties I planted last year; can not say how well they will do. The vines of all three varieties made a good growth. The Austin dewberry is one of the very earliest berries we have. My vines are in full bloom now. We have the Early Crandall blackberry, which I think is one of the very best of the blackberries. If they have good care and plenty of water, they will bear from June until October. Blackberries will stand lots of pruning. I prune mine two or three times a year—the last time in February or March. I go over them and cut out all of the dead wood. I have also found the best way to raise blackberries is to keep them in hills far enough apart so you can work around them. You can get at the berries so much better to pick them, and get larger, better berries and more of them.

## ENTOMOLOGICAL.

### Fumigation for Scales on Citrus Trees.

From a paper read by MR. HEMAN COPELAND, at the Farmers' Club Institute at Pomona.

The simple process of using hydrocyanic acid gas under the tent in the night time is so well known that it does not seem necessary for me to take up time in giving a detailed description of it. The question that we are most deeply interested in is fumigation—the most practical, economical and reliable method for the orchardist to use in order that he may have clean and healthy trees, which will give him clean and attractive fruit for the market? There is considerable area in southern California that claims not to suffer seriously from the effects of scale pest, but there is probably as much or more area devoted to citrus fruits in nearer proximity to our coast where the scale are now with us, and we may expect to have them to deal with until they may be overcome by some predaceous or parasitic enemies, and may that day come speedily.

Everybody knows that when we have what seems to be an overabundance of citrus fruit, that it is noth-

ing but folly to put anything but good and attractive fruit upon the market, for he may lose the picking and packing charges, together with the possibility, if not the probability, of the freight. And everybody knows as well that in such times good fruit will sell for something, and it must be attractive to command the best prices, so that it behooves us to use that method which will give us the fruit in its best condition.

**WIDE EXPERIENCE.**—To myself there is no question as to the value of fumigation for destroying the scale, even after so much has been said in favor of spraying and spray materials by dealers and by the press. Circumstances with me are such that I am forced to look upon this matter only from a business standpoint. If either one of these methods is better and more economical than the other, I fail in my duty if I do not find out which it is. To do this I have tried all kinds of spray material, using thousands of gallons, have used tons of cyanide, and have spent days and months in watching the results of both treatments.

**WHAT FUMIGATION WILL DO.**—I can not say that in every instance fumigation has been as successful as one could wish; but any failure that I have ever known could be attributed to something other than the method of treatment by hydrocyanic acid gas. I think it is an undeniable fact that after all the experimenting with the numerous spray materials, that to-day there is nothing known that can be safely used in spraying orange or grape fruit trees, when they have fruit on them, that will kill the scale without danger of marking, thus making it very unattractive and often entirely unfit for market. With the lemon it is quite different; but with that there is a very sensitive point between the strength of solution that will be needed to kill the scale, and that which will leave the fruit entirely unharmed and not marked. I have seen trees killed and acres of orchard ruined by spraying. I never saw fumigation do either. I never saw any fruit marked or injured by fumigation, except where the tent may have rubbed against a wet orange or grape fruit when green.

Fruit grown upon trees that have been fumigated has a much brighter and fresher look than any sprayed fruit; in fact, very little extra fancy fruit can be found after spraying. We have heard very much said about sprays that will not mark the fruit, but I have never seen an instance where spray was used strong enough to be satisfactorily effectual in killing scale that I could not find more or less fruit marked by it, and I have seen numerous cases where whole crops of oranges and lemons have been entirely ruined. Spraying will do for small or non-bearing trees, or if the crop has no value; but if there is a crop of valuable fruit on the trees, we can not afford to run the risk of the damage that may come to it by spraying with anything that I know of to-day.

**EFFECT ON THE FRUIT.**—I have many times asked the opinion of fruit buyers and packers regarding the comparative value of fruit that had been fumigated or sprayed, and they have invariably favored the fumigated. I have also asked the judgment of many packers as to what they considered the difference in the value of fruit treated by the two methods and in no case was it less than 25 cents per box in favor of the fumigated, and one packer, who was also a grower of lemons, said that his crop was so injured by spraying that his loss was equal to or more than \$1 per box upon the fruit packed for market. I think that it is speaking within bounds to say that spraying will reduce the value of the fruit just about one grade in packing, i. e., what would pack extra fancy if fumigated, would be but "fancy" if sprayed, and fancy would be only choice, and so on. Certainly this difference in the value must be fully equal to 25 cents or more per box of fruit, when at a very low value, if the fruit is high in price, it will be much more than that. This being the case, there can be no doubt as to which is the most profitable method of getting clean fruit, for we may expect, at least, a box of fruit from a tree that will not cost more than 10 cents to fumigate annually, and the larger and more productive the trees the greater the advantage of fumigation.

**ESSENTIALS.**—The requisites necessary for successful fumigation are: First, a good and uniform grade of cyanide; formerly there was much trouble in this direction, but of late we have had a much more reliable grade of goods, and at much less cost; the price seems to be on the decline at present—an item that is very much in the orchardist's favor. Second, the tents must be in perfect order, of strong material, with no holes and made gastight by some suitable material, and, when put upon the trees, must be securely held at the bottom and kept up in the trees forty-five minutes or more. Third, we must have men who will do all this work in a proper manner; the man who makes the schedules showing the material needed for each tree must have a good eye and judgment, to give just the amount of cyanide needed. Regarding this there is difference of opinion, but the tendency at present seems to be very much in favor of giving much more cyanide per hundred feet of tent space than formerly, and my own observation confirms the belief that this is a step in the right direction; however, the amount used must be according to the conditions of the tree, as well as that of the scale. It is a fact that it is never wise, if it can be possibly



avoided, to fumigate a tree that is suffering seriously for water, as in this condition it can not stand enough material to kill anything but very young scales. Fourth, the work must be done when all the scale are in a condition to be killed, if the extermination is to be anything like effectual; it is my opinion that more failures in fumigation have resulted from not doing the work at the proper time—that is, when the scale was not in proper condition—than from any other one cause, if not from all others; with the very scant allowance of water that many orchardists have had to contend with the past few years, it has been no easy task to find both the trees and the scale in proper condition at the same time.

**CONDITION OF THE SCALE.**—One should not blame the fumigating contractor for failure to clean up his orchard, if he tells him to go ahead with his work either before or after it should have been done. If there is but one kind of scale to be considered, it is much easier to decide when to do the work than when the case is, as it is with us, in the San Diego bay region, where we frequently have both the black and purple scale upon the same orchard and trees. Both of them are easily killed when young; but when either of them are of that age that their armor covers perfectly developed eggs, it is impracticable to treat them with fumigation or anything else; but it is certain that fumigation upon a vigorous tree will kill older scale than any other method. If we remember the fact that "fumigation will kill anything that breathes," we may know that if we can get the scale out of the eggs, and before the older scale have their eggs fully developed, we can do perfect work. Therein is the important point.

It is not necessary that the black scale be all out from under the shell; but if they are "in the wiggle," as we say, the gas will penetrate among them and kill them. The black scale may be killed up to about the time the letter "H" is well formed on its shell. Wherever there is a uniform periodical hatch of these scales they may be readily destroyed, and these conditions are much more favorable away from the coast than near it.

**INSTANCES.**—In the fall of 1899 I had a four-year orchard that had always been sprayed once or twice a year. It was the blackest and dirtiest orchard I ever owned, and, being beside my home, I did not like to see it; so I had it fumigated for black scale, with the result that I have had the pleasure of seeing a clean orchard and selling clean fruit, and nothing has been done to it since, except to fumigate a few trees that showed some purple scale last fall. Last summer I had a picking of lemons from that orchard that I asked a packer to buy when it was next to impossible to sell even the best of lemons. He said:

"Yes, I will buy your lemons, because I know they were fumigated; but if they had been sprayed I would not even look at them."

The amount received for that pick of lemons, even at a very low price, would pay for fumigating the orchard.

In the spring of 1900 an orchard came under my supervision that had been allowed to become the worst infested of anything I ever saw, having all the mites and scale known in our section. It was immediately sprayed with a soap wash, carrying all the sulphur possible, for the purpose of destroying the mites, as well as the young scale. In the fall of the same year the orchard was fumigated, with the result that nothing has had to be done for the scale since.

I could name many other cases where fumigation has been found successful, but mention these, as they show that the work must have been performed at a proper time, and to emphasize the fact that we need to exercise the greatest care as to the time we do the fumigation.

In conclusion, I wish to say that my experience in treating the scale tells me that fumigation properly done, at the proper time, is the proper thing to do, because a dollar or so expended will do more than in any other way, and we avoid all danger of losing our fruit and trees, and will have the most attractive fruit possible.

## AGRICULTURAL ENGINEER.

### Oil for Roads.

By MR. O. W. LONGDON, Supervisor, Los Angeles County, at the Pomona Club's Institute.

Los Angeles county was the first to experiment with oil on roads, oiling 6 miles in 1898, 13 miles in 1899, 50 miles in 1900, and 110 miles in 1901. This was the mileage done by the board of supervisors and does not include work done in the various incorporated cities of the county.

Oil was first used on our roads with the sole object of laying the dust and making travel pleasant during the summer season. But we soon saw that we had something more than a dust layer—in fact, a road repairer and a road builder.

**THE OLD AND THE NEW.**—Formerly the custom was to grade roads during the winter months and let them go to pieces during our long dry season, then regrade the following year, and so on, with the re-

sult that we seldom had a good road anywhere for two consecutive months in the year.

Now we devote a great deal of care to the preparation of our roadbed, cutting and filling uneven grades as required, grading to a good crown to insure proper drainage, and where culverts are necessary we build them of stone, concrete or pipe; and where material is to be had and the roadbed seems to demand it we surface the road with decomposed granite or other coarse gravel. Our theory is to build our roads as good as conditions will allow, and then take care of them. And it is in the care of our roads during the summer months that we find the greatest benefit from the use of oil.

**WHAT OIL DOES.**—Oil lays the dust. It is superior to water, in that, when properly applied, it is lasting, costs less, makes a desirable road, and can be used in districts where water cannot be had.

It coats the road with the wearing surface that needs but slight attention to keep in good repair. It enables us to build up weak places, where water finds and increases the number of chuck holes. Oil soaks in and remains a part of the road, while the mud caused by sprinkling with water sticks to the wheels, besides which water evaporates.

**MAKING THE ROAD.**—When our roadbed is in shape we apply the oil hot by means of either the DeCamp or the White machine, or a spray, manufactured for Supervisor Wilson, which is attached to old watering carts, and gives very good results. The hotter the oil the quicker it unites with the dust and the more readily it is absorbed by the road surface.

On most of our roads we oil a strip 12 feet wide. In a few exceptional cases we have oiled a strip 18 feet in width. At the first application we use all the oil the road's surface will absorb. The quantity varies, however, according to the kind of soil and the condition of the road's surface, from 60 barrels on a well-packed mesa road to 200 barrels on a light, sandy road per mile.

The first year a road is oiled two and sometimes three times, the second and third oiling being very light. The second year one light application, as a rule, is required, except on roads that have very heavy traffic, and such roads have to be renewed every year, as in wet weather the heavy traffic breaks and destroys the oil crust.

When one or more tanks of oil have been distributed on the road the man doing the work proceeds to stir the oil and the loose material of the road surface by driving back and forth over the oiled strip with a harrow or with the drags of the DeCamp machine. This mixing incorporates thoroughly the dust and oil, spreading it evenly over the road's surface. All sloppy streaks or puddles of oil which are the result of hard spots in the road, or of too much oil, we cover with sand or dust from the roadside, throwing on with a shovel sufficient loose material to absorb the surplus oil. The more thorough the union of the dust and oil the less complaint from the public when traveling on a newly oiled road.

A loose, dusty surface is as necessary for the application of oil as a good foundation is necessary to make it lasting. Cold oil rolls up into balls and will not take kindly to the dust nor spread evenly over the road. It sticks to everything except the roadbed. This applies to cold oil on roads which must be used for travel immediately after the oil is applied. We have all observed, however, that cold oil, if spread on the ground and left undisturbed, will in time harden into a beautiful asphalt surface. How to get this result on our roads and not close them to the public is a problem not yet solved. The heavy oils, carrying from 25% to 50% of asphaltum, have given the best results, the light gravity oils being not much better than water on account of their tendency to evaporate.

**THE COST.**—The oil costs us 50 cents per barrel in Los Angeles, and will average 25 cents additional distributed on the road, making our roads cost us from \$50 to \$150 per mile the first year. The cost of maintenance during the following years is much less per year, varying with the soil, condition of the road and volume of the traffic. Oil will lay the dust and improve the surface of a road on any kind of soil in dry weather, but oil, clay and heavy travel make a most disagreeable road in wet weather. I believe, however, that a well-drained clay road covered with oil and heavily coated with sand will make a good all-the-year road.

Our best results from oil have been obtained from our mesa roads, composed of sandy and gravelly loams and decomposed granite.

Old roads that have been sprinkled for years with poor results have been put in good condition with one or two applications of oil.

We have found that we can not only repair our oiled roads with oil, but that it is the best material with which to mend chucks and ruts in our other roads. Mixed with the soil of almost any road, it will stay when packed in a depression.

**How to Do It.**—The following are among the essentials for making and maintaining good roads, viz.:

A well-graded road, packed by winter rains or by thorough rolling.

Oil as soon as there is sufficient dust on the roads, in the late spring or early summer.

Oil often enough and with sufficient quantity to make it pack.

Apply the oil when the weather is hot.

Reoil dry places to prevent chucks.

Occasional going over the road with a plank drag helps it where the traffic is inclined to wear ruts in the road.

Have the road foreman keep a few barrels of oil on hand with which to repair chuck holes and weak places.

A little oil and a hand rake will work wonders in the imperfections of an oiled road.

**THE FUTURE.**—In my opinion the oiling of roads in this country is yet in its infancy. I believe that we shall improve our methods and appliances for doing the work, and that an increasing proportion of our road money will be used for oil.

Good roads, free from dust and chuck holes, are demanded at this time, and no one thing so cheaply produces this result as oil. Not only is this dustless condition of benefit to the travelers on our public roads, but the horticulturists located along our oiled roads receive even greater benefit by reason of the protection to their trees against constant showers of dust which would otherwise fall upon the foliage, strangle the leaf function and injure the crop.

The protests against oil roads have almost disappeared. The demand for them is steadily increasing.

## THE POULTRY YARD.

### The California Poultry Interest.

By HENRY BERRAR of San Jose in the forthcoming report of the State Agricultural Society.

Of all the industrial arts poultry culture offers the greatest inducements and the best opportunities for investments. Yet it is a fact that this industry is constantly overlooked by the average individual. The officers and members of the State Agricultural Society recognize the importance of this industry, and are using their best endeavors to educate the people and instruct them in this branch of economies.

**AT THE EAST.**—Many of the Eastern States which lack the natural facilities and advantages of California have long since recognized its many important phases and lend encouragement and support by liberal appropriations for its promotion and the assistance of those who are willing and anxious to avail themselves of the advantages of experiments conducted scientifically.

Systematic reports of progress are made and statistics are printed. Bulletins and pamphlets are distributed to their poultrymen free of charge. The result is that what was formerly the most unimportant adjunct of the farm is now the best paying element of agricultural investment.

In addition to the home product, we are the recipients of hundreds of carloads of poultry products and there is never a time when eggs and fowls do not command a good market, thus demonstrating that an independent living would be assured to thousands of families who should enter this business to supply our local markets. There is no fear of this industry being overdone, as there is an unlimited home market for poultry products, and there always will be an unlimited demand for these products in our island possessions and in the Orient.

**STATISTICS.**—The United States imported millions of eggs in addition to the estimated \$140,000,000 worth marketed last year. The demand increases faster than the supply, and this industry represents to-day as an annual output and stock on hand the enormous sum of \$700,000,000—second on the list of industrial economies. To encourage the investment of private capital this State should assist its poultrymen and the public in general in mastering every detail of this business.

The figures of the Department of Agriculture show approximately last year 285,000,000 chickens in the United States and 10,000,000,000 eggs, or about 655,000 tons, exclusive of all eggs used or consumed before reaching market. The output of eggs last year was greater than the postal revenues, and large enough to have paid the entire expense of the War Department.

**WHAT IS NEEDED.**—The lack of interest of the average citizen is only exceeded by the inertia of the State. Breeders and keepers of fowls are uninformed as to the fundamental facts and established principles which are no longer subjects of experimentations. No State in the Union has greater natural resources, finer climatic conditions or better market. Instead of importing poultry products, we should have thousands of poultry farms throughout the State and be exporters. There is no other industry in California which offers a more independent and enjoyable way of earning a livelihood. No other department of farming will yield larger returns. While a flock of fowls is a most valuable adjunct to the farm and orchard, it does not necessarily follow that a successful poultryman must be a farmer. Indeed, many of our most successful poultrymen are "city men," who know nothing about farm work—men who by close application, study and work have mastered the science and art of incubation, brooding and egg production, and by studying the experiences



of others in good poultry journals have attained great success in producing first-class stock in every way.

**COMBINED FRUIT AND POULTRY CULTURE.**—Our orchardists are gradually awakening to the importance of combined fruit and poultry culture. In addition to the valuable service rendered in ridding the orchard of insects, the fowls are a never-failing source of revenue. Poultry distributed throughout an orchard on the colony plan thrive well and yield a large income in proportion to the expense. At times when the sale of fruit is slow and the returns disappointing, the busy hen offers relief and assistance when all other resources fail.

A visit to Santa Clara valley will disclose many orchards in which fowls are kept to destroy the bugs and worms, so detrimental to successful "fruit culture." As an instance of the benefits derived from combining these two industries, I respectfully call attention to the fact that in orchards thus protected the canker worm has been kept in check, while in neighboring orchards devoid of fowls great expenditures of time and money have failed to accomplish as good results.

With all the advantages to be derived from keeping poultry in the orchard, but few objections can be waged against the proposition, and many of these, in fact, are without foundation. With the exception of prune orchards during the ripening of the fruit, the fowls have not been found to be of any disadvantage. In the peach and apricot orchards they do not damage the fruit when ripening, but in the prune orchard it may be found necessary to confine the fowls during the dropping of the prunes.

In selecting fowls for the orchard probably no other class will prove more serviceable and cause less damage than the Asiatics, as the varieties included in this class do not fly high, hence they cannot fly into the trees and cause damage while the fruit is ripening. All of the orchardists of this State are capable of supporting a fine flock of fowls, and no orchard will be without them when our orchardists become fully aware of the advantage and profits resulting from the combination of these industries.

**NATURAL ADVANTAGES.**—California offers ideal conditions for poultry raising. It is a known fact that all fowls, both old and young, thrive on green foods. No State in the Union produces a greater variety of grasses and vegetables, and the fact that they grow and are cultivated the year round, cheaply and in great abundance, gives the California poultryman a decided advantage over Eastern breeders.

Not only is this true of green foods, but the many varieties of grain of the best quality and mill products are grown, manufactured and sold at less cost than in many other States. This fact, taken in connection with our excellent markets and steady demand, explains in a measure the success of our poultrymen, and should be an incentive to many to enter into this business, particularly those possessed of limited means and small tracts of land. If these facts were properly placed before the people of this State, and of the United States, the importation of poultry and poultry supplies would cease.

Many Eastern poultrymen who are put to endless trouble and great expense in preparing for the changes in seasons would investigate and surely avail

themselves of these advantages in climate, soil, markets and productions. Owing to the mild climate in this State, it is not necessary to build elaborate air-tight buildings, such as are in use in Eastern States. Any ordinary frame building with water-tight roofing answers. It is an acknowledged fact that fowls raised in colder climates do not lay as many eggs as do our California fowls.

**INCUBATORS AND BROODERS.**—In addition to natural advantages, the incubators and brooders manufactured in this State are considered the equal of any manufactured elsewhere. Thousands of these machines, built on the best principles known in artificial raising of poultry, are shipped to all parts of the United States, and the large shipments to foreign countries are proof of the positive excellence and merit of these machines, which have given our manufacturers a world-wide reputation.

Hundreds of mechanics and others who are not engaged in poultry culture are thus given steady and lucrative employment. The introduction of the incubator and brooder has revolutionized this industry. The business has assumed enormous proportions and each year shows a greater development. Hatching can be conducted continually throughout the year, and it is easier to rear hundreds of chicks than dozens by the natural methods. This practically gives the poultrymen control of the conditions necessary to success, enabling them to rear thousands of chicks at the most profitable time of year. The most money from poultry has been made by those who have familiarized themselves with the details of the artificial hatching of chicks.

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Three men and one team can put up 400 bales per day.  
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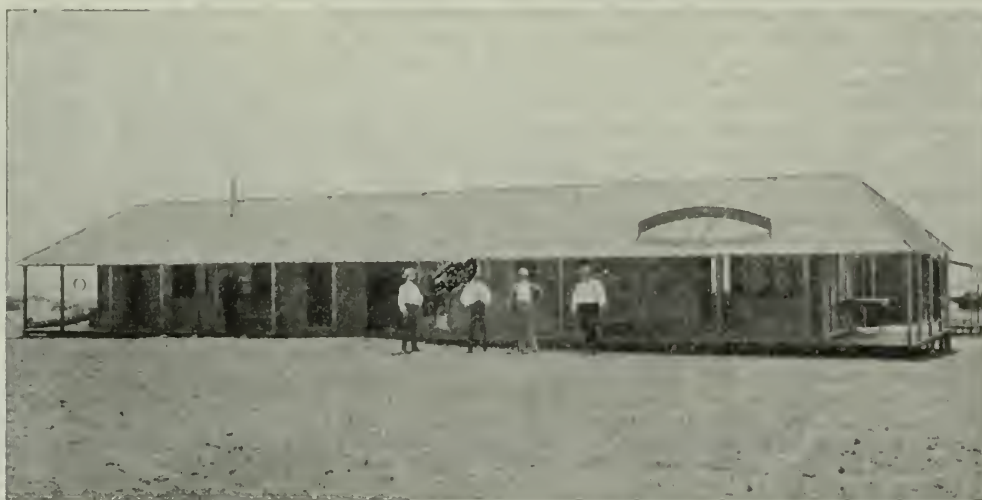
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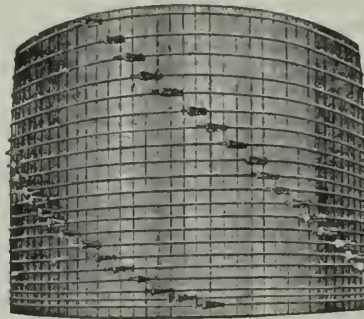
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## Agricultural Review.

### ALAMEDA.

**ASPARAGUS AND RAUBARB GOING EAST.**—Haywards Journal: At Haywards station an interesting sight is the preparation of asparagus for the Eastern market, by H. W. and W. E. Meek. Over eighty women, girls and men are employed, and the shipments are over a carload daily. The different processes the asparagus goes through before it reaches the last hands, when each bunch is wrapped in waxed paper, is interesting. In each box are eight bunches of asparagus, and the bottom of each box is packed with wet moss, that keeps the vegetable in good condition. The crates are light and airy and the bottom is considerably larger than the top, so as to prevent any crowding. This delicious vegetable goes to Chicago, New York and all the Eastern cities. The asparagus is being shipped in refrigerator cars by W. F. & Co., and goes through in quick order. At San Lorenzo the Meek estate is shipping a couple of cars of rhubarb daily, and altogether they are kept pretty well occupied.

**BIG BEET FIELDS.**—Oakland Enquirer: The beet raisers in the vicinity of Pleasanton are very busy getting in their beets. About 3000 acres will be planted there this season.

**APRICOT PLANTING.**—H. Sorenson, who set out 400 apricot trees last year at Haywards, has found that they did so well that he is setting out 2000 more of the Blenheim variety this spring.

### BUTTE.

**PREPARING TO IRRIGATE.**—Gridley Herald: Frank Watson, superintendent of the Reed orchard northeast of this place, informs us that he is now at work putting in an irrigating plant to supply the place of the one in use during the past few years. The present plans contemplate the use of electricity as a motive power, and the capacity of motor, pump and flume will be sufficient to irrigate the whole orchard, whereas heretofore only a portion of the place has been watered.

**GOLDFINCHES ATTACK PRUNE BLOSSOMS.**—Frank Watson, superintendent of the Reed orchard, directs attention to something new to him. The goldfinches, flocks of which are about the orchard, are attacking the prune blossoms, biting out the ovary of the flower. Under some of the trees the ground was covered with the petals of the blossoms which had been dropped intact by the birds after they had bitten out the tiny embryo prune. The superintendent does not believe, however, that the damage will be of any consequence, as a flock of goldfinches would have a large contract on hand if they attempted to eat even a small fraction of the blossoms on the trees.

**SHIPPING HEMP.**—Mr. John Heany shipped a carload of baled hemp to New York one day last week, and he tells us that he will have about ten more carloads when the crop of 1901 is all broken. The new crop is now sowed, Mr. Heany using again this year a carload of commercial fertilizer on the hemp fields. He realized a substantial gain in the crop last year from similar treatment and has adopted it as a regular item in the industry.

### CONTRA COSTA.

**GREAT PUMPING PLANT.**—Antloch Ledger: The large pump steamer, which was towed up the river to Andros Island last week, is the largest floating pump on this coast, if not in the United States. A number of pontoons comprise the other accessories. This pump will be used to drain Andros and Brannan islands of water caused by the late overflow. This pump has been used in Oakland harbor with great success. Its capacity is 100,000 gallons per minute, and any old thing small enough to pass through the pipe can be transferred from one point to another. For instance, the pump can be anchored near the sand hills east of Antloch, the pontoons stretched across the river, and the pipe laid on top of these and over the top of the Sherman Island levee and the sand deposited in tons on any spot in a short time.

### EL DORADO.

**PRESERVING EGGS.**—Ed. Republican: Noticing in last week's issue of your paper the query of a correspondent wishing to know the proportions of silicate of soda, to be used in preserving eggs, I supply the following formula. I first tried it last season with best of results: The proportion of water is 4 to 1. Place the eggs in an earthen jar and keep in a cool, dark place. Soft water boiled is the best to be used, letting it thoroughly cool before mixing. —MRS. J. J. MILLER.

### FRESNO.

**A BIG VINEYARD.**—Fred Nelson is preparing ground for Charles Ochs at Fowler upon which to root 250,000 grapevine

cuttings. One hundred thousand will be Sultanas, 50,000 Thompson Seedless and 25,000 Muscats. The remainder will be two or three choice varieties of wine grapes.

### GLENN.

**A NEW GRASS.**—Willows Journal: D. S. O'Callaghan has sent to James Boyd from Ellensburg, Wash., a package of Russian broom grass, with the request that he experiment with its growth on his place near Willows. The grass has been a success on the dry land near Ellensburg, and Mr. O'Callaghan thinks that it will grow here. It makes splendid pasture and grows during the entire year. Mr. Boyd will give it a thorough trial.

### KERN.

**GROUND HAS SETTLED.**—Bakersfield Californian: Owing to the recent heavy rainstorms in the mountains, the ground at Tehachapi has settled in places from 6 inches to 2 feet. The lot on which a large hotel was constructed some years ago has settled to such an extent that the building, being cracked and uncertain on its foundations, is not safe for entrance. A part of the building, which was never entirely finished, has been used as classrooms by students who could not be accommodated in the schoolhouse, but the trustees have been forced to transfer the desks to a private house to insure the safety of the pupils.

### KINGS.

**TREE PLANTING.**—Hanford Sentinel: The tree-planting enterprise by the Woman's Clubs has been carried out in the main. Last Wednesday night saw all the 3 miles set apart for Lemoore section completed, and yesterday Armona section of a like distance was planted. About fifteen men did the work and did it well. The ladies of Armona gave a dinner at the Armona reading room and it was greatly enjoyed. The trees along the line will be watered next Monday, and then they will all be boxed to protect them and cared for during the summer. Thus has begun an enterprise that will never be forgotten in this county. When the 9 miles of that shaded avenue grows so as to make a showing, which will be only a few years, those who were instrumental in beginning the work will be referred to as benefactors.

**EARLY FRUIT.**—J. J. Adams, who is residing on a ranch north of Hanford, brought in last Monday a stem picked from a Royal apricot tree. The stem was 2 inches long and bore eighteen apricots, all as large as the egg of a robin. If the frost does not come to thin out the fruit, there will be plenty of work for the clubbers knocking the green fruit off the trees.

**A HEN WORTH HAVING.**—Mrs. W. S. Bloyd of Hanford has a hen called The Neversetter that lays an egg as large as a turkey egg. One on exhibition measures 6½ inches one way and 7½ inches the other.

### LOS ANGELES.

**SAN GABRIEL WALNUT GROWERS INCORPORATE.**—Pasadena Star: The San Gabriel Walnut Growers' Association has been incorporated by A. B. Chapman, Richard Chapman and Lucy C. Lantz of San Gabriel and Lettice Chapman and Evelyn Chapman of Los Angeles. The capital stock is \$25,000; subscribed, \$5000. The principal place of business of the new association is San Gabriel.

**WALNUT GROWERS' MEETING.**—The annual meeting of the Los Nietos and Ranchito Walnut Growers' Association was held at Rivera Tuesday. Secretary Montgomery submitted a report showing total receipts since the organization of the association on February 23, 1899, to be \$342,365; total disbursements, \$340,675. The old board was re-elected, excepting that J. A. Cole took the place of J. S. Isbell. H. W. Judson was elected president and J. A. Montgomery secretary.

### MERCED.

**EARLY BARLEY.**—Sun, April 4: Reports from various parts of the county show that the grain crop is unusually far advanced, considering the season. Mr. Cleveland of Rotterdam has some barley that has already headed out, and it is thought other ranchers are able to report a similar condition of the growing crop.

### ORANGE.

**A PROFITABLE INDUSTRY.**—Orange Post: Mrs. J. A. Huhn has finished shipping green peas. The first peas were picked November 8th, and some have been shipped every day since, except Chinese New Year week. Mrs. Huhn has not been able to get people here to pick peas, so has kept from three to nine Chinamen camped on the ground and then has given work to all the white people that could be secured. The Chinamen averaged \$1.50 per day, and some weeks \$2 per day. Some of our women and girls earned \$2 per day. Mrs. Huhn thinks that, if markets could be found, which is only a ques-

tion of time, the raising of winter vegetables will be a greater source of wealth to Orange, Villa Park and vicinity than the apricot crop ever was. The business has been more profitable this winter than ever before. E. H. Ashley, who owns and cultivates part of what was formerly Rev. P. D. Young's place, had about half an acre of beans that yielded seventy sacks in four pickings. Mrs. Huhn bought them at 2 to 3 cents per pound. At seventy pounds to the sack, this would net Mr. Ashley a very neat little sum for the use of a half acre for three months. He now has a fine crop of barley on the same place. With the plentiful supply of water, Mrs. Huhn thinks great things may be achieved in Orange county in this line of industry.

### SACRAMENTO.

**ASPARAGUS BRINGS STIFF PRICES.**—Bee: A local marketman who collects large quantities of vegetables for shipment by the express company says the principal shipment being made to the East now is of asparagus. "But asparagus is very scarce," he remarked, "although enormous quantities of it are raised hereabouts. The vegetable is gobbled up by the local canneries as soon as it comes into the market. That is a good thing for the growers, who get fancy prices, but it is hard on the commission merchants. Asparagus used to sell as low as \$20 a ton, and growers were glad to get that amount; but now they are being paid as high as \$60 a ton. We are going to make a shipment of asparagus to New York, but it will be a small one, because we cannot get hold of a large quantity of the vegetable."

### SAN BERNARDINO.

**NEARLY 11,000 ACRES.**—Chino Champion: On Wednesday the contracts for beet planting for the Chino factory covered 10,700 acres, and Manager Schroeder said there were at least 200 acres more yet to be signed. The total will closely approach the 11,000-acre mark. This will be some 4000 acres more than has ever before been raised for this factory. Up to last Saturday night (the company's reports are made up to each Saturday night) there were planted 6500 acres. Last week 2000 acres were planted. If the weather continues fair the next two weeks will see the bulk of the planting done. Scattering pieces of moist land will not be planted until a week or two later.

### SAN JOAQUIN.

**REPLANTING A LARGE VINEYARD.**—Lodi Sentinel: A. M. Harshner, who lives a few miles west of Woodbridge, employed several Japs to set out sixty acres of vineyard this spring. They made a big mistake in the planting of the vines, and now Mr. Harshner has secured the services of Archie Holden to transplant the entire vineyard.

**SIXTEEN HUNDRED DOLLARS ON FOUR ACRES OF VINEYARD.**—M. E. Angier, the young vineyardist living a few miles south of Lodi, has in his possession a vineyard of forty acres which cleared over \$4000 last year, thus averaging over \$100 per acre. He is of the opinion that any one who will sell a fully developed vineyard for \$300 per acre is making a very bad mistake, as the vineyard will realize that amount itself in three years. Mr. Angier has four acres of late Emperors which brought him \$1600 last season.

**VINEYARD SOLD FOR \$300 AN ACRE.**—The largest price ever paid for a tract of land in San Joaquin county was given last week by H. A. Towne for a 55-acre vineyard near Woodbridge. He paid \$300 an acre. The land is set to Tokays. A. T. Covell, who sold the vineyard, has netted over \$100 an acre per season for the past two years.

**EXPORTING FINE DAIRY CATTLE.**—The Pierce Land & Stock Co. of Stockton has just shipped from its Riverside ranch on Rough and Ready island twenty-two head of fine cattle by the steamer Guatemala to Central America, where they are to be used for dairy purposes.

### SANTA BARBARA.

**BIG YIELD OF HONEY.**—San Luis Obispo Tribune: Probably the largest "bee ranch" in this State is that of Kelly Bros. in the Santa Ynez mountains, in this county. They report an unprecedented season of honey. Two large camps, with as many men employed in each as can be found to work, are employed by the Kelly Bros., and they are taking out an average of 2500 pounds of honey a day. This average has been maintained for the past three weeks, and will continue, the owners say, for some time. The Kelly apiary consists of some 900 stands, or swarms. The working force of bees is increasing at such a rate that it is running away with the facilities for keeping the little workers under control. Led by new queens, swarms are leaving the parent

hives and making quarters for themselves wherever they can find a box or tree or hole in the ground to enter. It is predicted that next year every squirrel hole, every stump and every hollow tree will be flowing with honey, for many of the swarms have escaped from the men whose duty it is to look after them. The increase is greater than can be handled.

### SANTA CLARA.

**PRUNE YIELD WILL BE LARGE.**—San Jose Herald: This season's prune yield in Santa Clara county will without doubt be a bountiful one. The orchards throughout the valley never bore a more promising appearance. From every part of the county come reports of a most cheerful character. The heavy rains of a month ago washed away the gloomy anticipations of those who had complained previously to that time, and the fingers of Jack Frost have never, through all the winter, touched the buds more than ever so lightly.

### SONOMA.

**SENSIBLE FARMING.**—Sonoma County Farmer: H. H. Button, one of the patrons of the Third Street Creamery, milked twenty-five cows last season, raised thirty-five calves and a lot of hogs, at the same time enriching his farm. With the refuse from a straw stack, horse stable and cow barn, he manured heavily over four acres of land last fall, and he figures out that it will return him upwards of \$10 an acre increase in crop this year, with considerable more the following year, when the manure becomes thoroughly incorporated with the soil.

### TEHAMA.

**GOOD INCREASE OF LAMBS.**—Red Bluff News: G. C. McCoy's band of sheep weathered the winter storms well, and in consequence there was a large increase of lambs, considering the severity of the latter part of the winter. The lambing season is over and he marked 90% of lambs. He lately had his shearing pens cleaned out and has a crew of shearers engaged to begin shearing as soon as the weather settles.

**SALES OF SHEEP.**—It is reported that C. J. Gooch has sold to D. S. Cone 1200 yearlings, with the wool off, for \$3 per head. The Cone & Ward Co. and D. S. Cone have purchased from Jas. Barry 3500 head of wethers and yearlings, the company taking the yearlings at \$2.50 per head and Mr. Cone taking wethers at \$3.

### VENTURA.

**REDUCED LIMA BEANS ACREAGE.**—Independent: Word comes from Oxnard and vicinity that the acreage planted to beans this year will fall considerably short of the usual number devoted to growing the succulent Lima on account of the favorable prospect for a good beet crop. It is estimated that 20,000 acres will be planted to beets this year, an increase of 9000 acres over last year, which means a corresponding decrease in the bean acreage. The falling off in the acreage will occur mostly in the Colonia, where large crops are usually secured. Ranchers in Pleasant valley and the Los Posas will also decrease their acreage in Limas and plant the Blackeye and other small varieties, and taking it altogether it is thought that the Lima bean crop will be reduced to the extent of about 10,000 acres. Another Lima bean producing ranch that will be taken off the list next year is the Rancho Santa Clara del Norte, the new owners having declared their intention of planting every available portion of this large ranch to walnuts and lemons. From this it would appear that Limas will be able to hold their own for a time at least, as the decrease in the Rancho del Norte will amount to nearly 4000 acres.

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A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

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## Tilton Apricot.

First-Class Trees 4 to 7 and 8 ft. high. Are in good dormant condition for planting. \$3.00 per 10; \$25.00 per 100.

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May still hold much of mystery;  
But one grave thought is clear and plain,  
We shall not pass this way again."

"The years glide by; stand strong and true;  
The good thou canst, oh! quickly do;  
Let gentle words soothe woe and pain,  
We shall not pass this way again."

### Little Things.

A little spring had lost its way  
Among the grass and fern;  
A passing stranger scooped a well  
Where weary men might turn.  
He walled it in and hung with care  
A ladle at its brink—  
He thought not of the deed he did,  
But judged that toil might drink.  
He passed again, and lo! the well,  
By summers never dried,  
Had cooled ten thousand parched tongues  
And saved a life beside.

—Selected.

### Toad.

I'm just about the color of mud,  
I've a bobby mug and a knobby back;  
I bundle away, I thrumble and thud,  
I lack the knack of walking a crack.

I sit and think at the chink of my hole—  
Nothing like flies for a plump, buff belly—  
I rather reckon I haven't any soul,  
Though I'm not altogether pebbles and jelly.

As soon as the roses I smell in the rain,  
I wink one eye when two wouldn't do;  
I pad my ribs, and I don't complain,  
I'm toad but no toady—how about you?

—John Vance Cheney.

### The Survivor.

When the last day is ended,  
And the nights are through;  
When the last sun is buried  
In its grave of blue;

When the stars are snuffed like candles,  
And the seas no longer fret;  
When the winds unlearn their cunning,  
And the storms forget;

When the last lip is palsied,  
And the last prayer said,  
Love shall reign immortal  
While the worlds lie dead.

—Frederick Lawrence Knowles.

### "Dead Leaves."

On the outskirts of the quaint old city of Leyden stand two houses side by side, suggesting by their rich, fantastic architecture a memory of mediæval Dutch. Quaint, sleepy streets, running at right angles, form grotesque vistas, which carry you back a generation or two. Most tourists find Leyden dull and stupid, and dull it is to dull people. In truth, the town is conducive to sleep, but are not dreams pleasant when they people the imagination with all that is beautiful and artistic when they paint with the colors of Rubens and Vandyke, and you live and breathe in an atmosphere of centuries ago?

The inmates of the two houses are a part of their environment, in touch with forgotten songs and that long ago of our happiest days.

But the similarity of these two ceases at this point. Nicolaas Witsen portrays the characteristics that his name suggests. Tall, lank in proportion, he is in striking contrast to his dapper little neighbor—the former stern, dignified and reserved, a pessimist, the latter cheery, bright and active, an optimist. Howbeit these two are firm friends, good neighbors and loyal citizens.

Nicolaas Witsen's garden is gloomy with a box shrubbery which outlines the paths. Fir trees, through whose heavy, hanging boughs no sunshine creeps, protect the windows from the glare of light which is allowed to flood every room of the house next door.

The garden there is gay with flowers, rich in their luxurious growth, filling the air with heavy fragrance.

Laughing and frolicking over its pebbly way, a little brook divides the gardens, but a rustic bridge makes good the difference which the water creates, satisfactorily acting as a go-between.

Neither Nicolaas Witsen nor Everard van Weede has ever taken to himself a spouse. To interrogate the shadows of their past would be an act of discourtesy of which I trust we are not capable. Some fruits mellow at the touch of frost, others wither and die.

On a perfect day in June, Nicolaas Witsen strides back and forth the length of his garden path. From his long clay pipe he sends out thick clouds of smoke which suspend themselves in midair, so still is the atmosphere.

"Bah!" he exclaims, stopping in his walk to salute his neighbor, "between your spring flowers and your autumn, your house plants and your young shoots, you've no time for the deeper researches of which the mind is capable."

Van Weede, bending all his energies toward the upheaval of a root which clung tenaciously to mother earth, stops to wipe away the beads of perspiration which streams down his jovial face.

"Well! well! neighbor, these pretty dears would not thrive should I keep my nose between two book covers; nay, I am the garden worm, and you the other sort."

"But here is good authority for becoming something better than a grub," and drawing a volume of Plato's dialogues from the back pocket of his coat, Nicolaas read: "The world of eye and ear delusions all," and here, turning a page, "and does not the mind reason best when it is not drawn aside by the ear or eye?"

"So, neighbor, you may be right, but give me something that my eye can look upon; your musty books attract mice, not roses, and I prefer the fragrance of a lily to the odor of old documents."

Witsen closed his book with a sound between a sigh and a groan, and thrusting his two hands deep into the pockets of his knee breeches, he stood thoughtfully watching a swallow soar above the tree tops and disappear into the chimney of his friend's house. Presently something touched him on the shoulder and fell to the ground—a red, red rose, rich in its magnificent beauty, lay at his feet.

"A flower for your thoughts, come, that's a good bargain, obtuse philosophies for a practical demonstration of God's power."

Witsen did not answer, but stooping down he raised the flower from the ground, twirled it idly for a moment in his hand, then, throwing it into the stream, he turned slowly on his heel and strode into the house.

Van Weede chuckled softly to himself. The indignity offered his gift did not distress him, for he knew his friend.

That evening Van Weede waited before crossing to his friend's house, as, indeed, it was his usual custom to do, until the old cathedral chimes floated their melody far above the gabled roofs and high chimneys of Leyden.

He loved music as he did his flowers, his birds, and, in fact, all that was brightest and best in nature, and among his most valued possessions in the drawing-room was an old spinet, whose voice was a pathetic reminder of more brilliant achievements. Drawing forth tender old ballads, Van Weede lived in the past as he touched the keys, and his cheerful face would sadden, and sometimes a tear trembled on his cheek. He always played these long-forgotten songs when he returned from his annual midsummer trip.

"You'll be away very soon now, I suppose," said Nicolaas, striking a flint stone, preparatory to lighting his pipe.

Everard nodded. A long silence followed before either spoke again. Were it Van Weede's midsummer trip, or Nicolaas Witsen's in the dead of winter, neither questioned the other as to its purpose. They would be absent in all about three days and then return, Everard more gentle, quieter and sad-

dened; Nicolaas gruff, antagonistic and bitter.

"Here is the Dominie," said Van Weede, the first to speak, and pushing back his chair he made room for their visitor.

"Good evening, gentlemen, fine night this," said the minister, taking the proffered seat. "So, Master Everard, you have not taken flight as yet; thought our good friend would be lonely,"—nodding his head toward Nicolaas—"and it is my duty to relieve distress, you know, either of body or soul." He glanced towards Witsen.

"Well, I imagine time does not hang heavy on your hands," gruffly answered Nicolaas.

"Come, come, neighbor, surely this peaceful little town cannot have so many cases of misery?" Everard said; "It would distress me greatly should I feel that care and want surround me on every side."

"When will you learn, Van Weede, that misery is the lot of every human being," Nicolaas brought down the chair which he had tilted back against the door, with an emphasis. "Is your own lot so peaceful and free from perplexity that you can gauge other men's thereby? bah!"

"Were it not that sometimes that my posies did not bloom, or for some other trivial disappointment, my life would be complete; that sorrow comes to all, Nicolaas, to that can I testify," Everard's tone grew more gentle, "but that we should nurse this grief, holding it like a leech to our hearts till it draws all of its beauty, all the ideals, ambitions and faiths from our life, then that man lives no more, he merely exists."

"Friend, your theories are as fine as the lace the women of Bruges produce, but they don't fit in the box of blocks men call years; life is a mass of deceit from the cradle to the grave. When we are young St. Nicolaas fails us, when we are old—God—"

Here the Dominie interrupted. "Nay, Nicolaas, those are harsh words; the creed of our forefathers cannot be so lightly disregarded. Our friend is right; you would take all that makes life worth living when you deprive humanity of its faith."

"Humph!" said Nicolaas, "this faith of which you boast, 'tis but an opiate administered by the priests to ease the burdens of the poor, and to make straight the crooked path for the rich. I'm not so easily caught with your gilt-edged doctrines; give me facts—undisputed facts—for I prefer to live on an intellectual rock to the shifting sands of a creed."

Neither made answer to this last speech. It was a common occurrence, these little skirmishes, and, if the truth must be acknowledged, to the minister's undeniable enjoyment.

But van Weede was sorry at these times, for beneath his friend's irony and bitterness there was much to admire. Intellectually strong, his soul had sought the unattainable; the ideal worshipped was perfection, and the disappointment in life keen.

For a time no word was spoken. The glowing stars with their unfathomed mystery slowly peopled the heavens with their glory, mute evidence of an unseen power greater than we. A sound reached them from the heart of the city, the night watch on his rounds.

"All's well—well—"

"All's well?" interrogated Witsen scornfully.

"All is indeed well—" repeated van Weede gently, sorrowfully.

The minister nodded good-night and walked homeward, looking up to the silent heavens above him, to the stretch of meadow on his right, and to the town on his left, softly whispering, "all is well, all is well."

From the window of his breakfast room Nicolaas Witsen could look into his friend's garden, and van Weede was generally there busy among his flowers. It was a satisfaction to Nicolaas, as he read from the book beside his plate or drank his tea, to glance now and then toward his friend clipping a branch or tying up the luxuriant growth of roses, meanwhile whistling a smothered sort of music. So Nicolaas was disappointed when he seated himself the following day at the little round table not to see

his friend. Instinctively he knew that he had gone upon that mysterious errand.

He pushed his chair back from the table, leaving his food untasted, and stepping through the open window he stood before the little bridge. To have acknowledged loneliness would have been treason to his boasted independence, but for all that, there was a queer little pain tugging at his heart, a sense of oppressive stillness and need. "Why had they not both gone at the same time, for I could have gone my way and Everard his. I am getting too old to travel during the winter," he reasoned to himself; "the last time I was laid up with a cold which lasted until spring."

"Let me see," he continued, slowly retracing his steps to the house, "yes, I can—I can go and be back before Everard returns."

A short journey from Leyden stands the ruin of a church, without door or window, roofless. It is an insignia of life, or, better said, of death, for between its ivy-covered walls lie the peaceful dead. For years the village has kept intact this beautiful ruin, now God's Acre. Outside are also well-kept graves, but our interest centers within, for standing by one of the stone slabs is Everard van Weede. He has just placed a heavy wreath of white roses over the inscription "Antoinette," and now stands bareheaded, a look of reverent rapture lighting his aged face.

There is a step almost at his side, but he heeds it not, for he is far away. Antoinette has flung a jest, he smiles, then she laughs at his folly, his presumption, she says, and he leaves her, carrying the white rose she has dropped from her hair—and then—

"My God, Nicolaas Witsen."

At the sound of his name Nicolaas draws himself erect, the wreath of ivy that he holds in his hand slips to the ground. All the passions of his youth surge through him, throbbing his pulse. The remembrance of her as she stood before him seems as yesterday; her refusal and final acknowledgement of her love for another, and Everard was that other, his rival. A moment of fierce anger, then his gray eyes soften, his form relaxes, and he stretches out his hand toward his friend.

"Everard," he says, a pathos in his voice hitherto unknown, "You, too, have loved—" his emotion is so great that he cannot finish the sentence, but he points toward the inscription.

Van Weede does not answer, but stooping down he entwines the ivy and the roses together in one wreath and lays it back again upon the stone.—Ella Broes van Heekeren.

### The Dead Swan.

A gentleman in Lincolnshire, England, sent a dead swan to the Athenæum Club, addressed to the secretary. A special dinner was to occur that week, and the committee without question turned the bird over to the cook.

At the dinner the swan, resting on a great silver dish, was a delight to the eye; but when it came to carving and eating the bird no knife seemed sharp enough to cut it, and eating it was out of the question.

A few days later the donor met the secretary and said, "I hope you got my swan all right?"

"That was a nice joke you played on us," returned the secretary.

"Joke! What do you mean?"

"Why, we had the thing boiled for thirteen hours, and even then we might as well have tried to cut through the Rock of Gibraltar."

"You don't mean to say you had the swan cooked!"

"Why, of course."

"Man alive! I sent it to be stuffed and preserved as a curiosity in the club. That swan has been in my family for 280 years. It was one of the identical birds fed by the children of Charles I. You've seen the picture of it. My ancestor held the post of 'Master of the Swans and Keeper of the King's Cygnets.' Well, I have no doubt it was a bit tough.—Youth's Companion.



### She Got the Beer Mugs.

When Eugene Field, that prince of good fellows, passed over to the shore he left his family many removes from affluence, and his daughter, Mary, a bright, talented girl, but by no means the greatest elocutionist in the world, put on the breastplate of courage and went out as a public reader. She won many large audiences in different literary centers of the country, many who bought tickets being moved to do so out of sympathy for the young woman who was alleged to be making such a brave fight against poverty, and by love for the father, whose gentle genius was mingled with such a generous passion for spending the last dollar that burned in his pocket.

One who had spent a dollar, which she could not really afford, to hear Miss Field read, was greatly interested a year or two later to meet a young woman from Chicago who was an intimate friend of the poet's daughter.

"Tell me about her," she said. "I hear she is going to be married. Did she make a living out of her reading?"

"Oh, yes," said the Chicago woman. "It was a grand success. Why, Mary Field told me that for the first time in her life she was able to have all the new clothes she wanted. And, do you know, she has made the largest and most complete collection of beer mugs in the West."—New York Times.

### Curious Feats with an Egg.

Dissolve an ounce of alum in a half pint of vinegar. Then take a camel's hair brush and paint with the solution whatever you desire on the shell of an egg. Let it dry, and then boil the egg for fifteen minutes. The writing will then have disappeared from the outside, but when the egg is cracked the writing will be found on the inside.

Stand an egg on end on the table, placing a tiny pinch of salt at the spot where you wish to stand the egg. This will not be noticed on a white tablecloth. You will then be able to stand an egg on end as long as you place it on the salt, as the small particles grip the egg and prevent it from falling. This is a splendid impromptu trick for the dinner table.

Dr. Price—Your husband's trouble is melancholia. Now, you'd help him materially if you'd only arrange some pleasant surprise for him.

Mrs. Sharpe—I know! I know! I'll tell him you said he needn't bother about paying your bill till he feels like it.

"Miss Holler says she thinks she will have her voice tried."

"Well, if she does, the verdict will be 'Guilty of murder in the first degree.'"

Gentleman (indignantly)—When I bought that dog you said he was splendid for rats. Why, he won't touch them.

Dog Dealer—Well ain't that splendid for rats?

Mrs. Jones—"Charles has an unconquerable spirit."

Mrs. Smith—"Indeed?"

Mrs. Jones—"Yes; he was two hours unlocking the front door early this morning."

"I don't believe you love me a bit," sobbed his wife.

"But I do, darling, I—"

"Don't tell me. It's unnatural you should. No man could love a woman who wears such old hats as I do."

"Don't you love the great, beautiful ocean?" said the sentimental girl.

"Yes," answered the unsentimental man. "But I'd like it better if it were not so full of watermelon rinds, lemon peels, lunch boxes and things."

"Do you believe in good dreams and bad dreams?" asked the superstitious man.

"Well, I don't know so much about good dreams, but I have had nightmares," answered the prosaic individual.

## DOMESTIC ECONOMY.

### Domestic Hints.

**BAKED TOMATOES.**—Select large, firm tomatoes, not too ripe; cut off a small slice from the blossom end and carefully scoop out the inside. Mix it with stale breadcrumbs, salt, pepper and a little chopped onion. Refill with dressing and a small piece of butter. Return top and bake in a hot oven thirty minutes.

**CREAMED SPINACH.**—Cold or freshly boiled spinach may be utilized in this way: Chop the spinach very fine and put in a saucepan with pepper, salt and a large piece of butter and one wineglass rich cream. Simmer until very hot, then serve. Garnish with diamonds of toasted bread and one hard-boiled egg, sliced.

**RAGOUT OF VEAL.**—Cut the meat into thin slices; put a large piece of butter into a pan, dredge the meat with flour, and fry a light brown in the butter. Take out the meat and put into the pan a cupful of cold gravy or stock, season with salt and pepper and a wineglass of tomato catsup. Then lay a few slices of cold ham in the gravy and add the veal. Serve very hot.

**CREAMED SWEET POTATOES.**—One pint of milk, eight medium-sized cooked sweet potatoes, butter the size of an egg, salt and pepper to season and flour to thicken. Make a cream sauce by heating the milk in a double boiler, thickening with flour and adding the butter and seasoning. Cut the sweet potatoes into small dice, put them in the sauce and let them cook for ten minutes. If liked, sprinkle chopped parsley over the top when serving. Another way of cooking sweet potatoes is to place them in a pan around a roast and let them cook with the meat. They should be frequently basted with the dripping.

**CAULIFLOWER WITH CREAM SAUCE.**—Two small cauliflowers, one pint of milk, a piece of butter the size of an egg, flour to thicken and salt to season. In selecting cauliflowers it is better to buy two small ones than one large one, as they will be found to have a more delicate flavor. Remove the green outside portions, wash in cold water, and cook in boiling salted water. After boiling ten minutes pour off the water, add a new supply, and let it cook for half an hour. Then drain off the water and put the milk in a double boiler with the cabbage, to simmer for half an hour. At the end of this time thicken the milk with enough flour to form a cream sauce, add the butter, and when it has blended with the milk serve the whole in a heated dish.

### Hints to Housekeepers.

If a sliced onion and carrot are cooked with veal, it will be found that the flavor of the rather tasteless meat is much improved. Veal cutlets rely for their flavor on the tomato sauce that is usually served with them.

To make celery slaw, take two cupfuls of celery chopped fine and one cupful of green apples, also cut fine. Place this in a saucepan with half a cupful of hot water; cover tight and steam five minutes; remove from the fire. When cold add two thirds of a teaspoonful of salt and a fourth of pepper, add half a cupful of mayonnaise and serve on lettuce leaves.

Beets in winter, according to an old housewife, require nearly a day's boiling to make them tender; they are unpalatable unless perfectly tender, when they are extremely good. With white sauce they are an excellent vegetable, and are also an acceptable garnish for steak, if cut in small pieces and fried. Their appetizing use when cut into dice and mixed with an equal quantity of diced cold potatoes, a mayonnaise put over the whole, is well known.

A suggestion for spring luncheons is that of a rather new way of serving oranges. They are peeled and pulled apart in their natural divisions, the tough white skin and seeds removed. The fruit is then piled in shaved ice, in some pretty dishes, and is served

throughout the meal like olives or radishes. It is delightfully cool and refreshing through a heavy feast, particularly in the spring.

For an emergency dessert at either luncheon or dinner a simple cake, baked in a ring shape, iced, and with plenty of blanched almonds sprinkled over the top, the center filled with whipped cream, to which a flavor of sherry is added, will be found acceptable. The city bakers, too, make an excellent wine loaf, sold at 10 and 15 cents, that is cheaper and easier, certainly at this season of the year, than the home-made cottage pudding, for which, when served with wine or lemon sauce, it is an excellent substitute.

One way of varying the monotony of baked potatoes is to cut off the end, remove the inside, mash, adding milk, butter, salt and pepper, the same as for mashed potatoes. Then place the mashed potatoes back in the potato shells, stick in the end of each a slice of bacon fried crisp. Place in the oven and heat through. This makes an ideal luncheon dish. Another way is to add grated cheese to the mashed potato, and place back in the shells and heat through so that the cheese melts. Some chefs garnish potatoes baked this way with a bit of white of egg beaten stiff and a spray of parsley.

## SPRINGTIME

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## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, April 9, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday.....	71 1/2 @ 72 1/2	72 1/2 @ 73
Thursday.....	72 1/2 @ 71 1/2	72 1/2 @ 71 1/2
Friday.....	71 1/2 @ 70 1/2	72 1/2 @ 71 1/2
Saturday.....	71 1/2 @ 70 1/2	71 1/2 @ 71
Monday.....	70 1/2 @ 71 1/2	71 1/2 @ 71 1/2
Tuesday.....	71 @ 71 1/2	71 1/2 @ 72 1/2

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday.....	42 @ 42 1/2	34 1/2 @ 34 1/2
Thursday.....	43 1/2 @ 42 1/2	34 1/2 @ 34 1/2
Friday.....	43 1/2 @ 42 1/2	34 1/2 @ 33 1/2
Saturday.....	42 1/2 @ 42 1/2	33 1/2 @ 33 1/2
Monday.....	43 @ 42 1/2	34 1/2 @ 33 1/2
Tuesday.....	41 1/2 @ 42 1/2	33 1/2 @ 33 1/2

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 09 1/2 @ 1 08 1/2	1 08 1/2 @ 1 07 1/2
Friday.....	1 08 1/2 @ 1 08 1/2	1 07 1/2 @ 1 07 1/2
Saturday.....	1 03 @ 1 07 1/2	1 07 @ 1 06 1/2
Monday.....	1 07 1/2 @ 1 08	1 05 1/2 @ 1 06 1/2
Tuesday.....	1 08 @ 1 07 1/2	1 06 1/2 @ 1 06 1/2
Wednesday.....	1 08 1/2 @ 1 08 1/2	1 06 1/2 @ 1 06 1/2

## WHEAT.

The firmness manifested in the wheat market at close of last review, proved of brief duration, so far as speculative transactions were concerned, and the strength in question was confined principally to dealings in futures or to speculative trading on paper. Chicago is the center of the wheat gambling business, where prices for futures or options are most of the time manipulated in the interests of a few cliques. In other centers practically the same conditions exist, only in a lesser degree, Chicago as a rule taking the lead in speculative dealings in wheat, other centers receiving the cue from the windy city by the lakes and being governed greatly thereby. In the local spot market there were no special changes in quotable rates, but the depression East and abroad was naturally reflected here with some effect, imparting a weak tone. Offerings in the sample market were not heavy, however, and buyers found it a difficult matter to obtain any concessions of consequence from recent prices prevailing. Ocean freight rates have recovered a little from the lowest point of the past few weeks, the latest reported charter being at 23 shillings, an advance of 6d., making the present rate \$5.60 per long ton or 25c. per cental. Prospects are that ocean carrying rates during the Summer will continue close to the levels now established. With a big crop in this State, as now foreshadowed, present freight rates are about as low as can be reasonably expected.

California Milling.....	1 12 1/2 @ 1 15
Cal. No. 1 shipping, alongside.....	1 08 1/2 @ 1 11 1/2
Oregon Valley.....	1 10 @ 1 12 1/2
Washington Blue Stem.....	1 10 @ 1 15
Washington Club.....	1 07 1/2 @ 1 10
Off qualities wheat.....	1 15 @ 1 07 1/2

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	68 3/4 @ 69-4	68 1/4 @ 68 1/2
Freight rates.....	35 @ 36 1/4	23 @ 23 1/2
Local market.....	97 1/2 @ 1 01 1/4	1 08 1/2 @ 1 11 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.07 1/2 @ 1.09 1/2.
December, 1902, delivery, \$1.05 1/2 @ 1.08 1/2.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.06 1/2 @ 1.06 1/2; May, 1902, \$1.08 1/2 @ 1.08 1/2.

## FLOUR.

Market is quiet, there being no active inquiry either for shipment or on local account. The outward movement to the Orient promises to be light for some months to come, as recent advices from that quarter report a glut of supplies, largely the result of recent heavy shipments from Puget Sound section. Quotations are unchanged, but full figures noted are more in accord with the views of sellers than with prices obtainable in a wholesale way.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 50 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

## BARLEY.

There are no large quantities offering, especially of feed descriptions, and with continued good demand for latter, prices are being well maintained, the quotable range remaining about as last noted. Considerable feed barley is being shipped to northern coast points and to the Hawaiian Islands. While shippers are in the market for brewing grades, they are bidding very little over the prices obtainable for choice feed. Chevalier is in light stock, recent shipments to Australia having made heavy inroads on supplies of this variety.

Feed, No. 1 to choice.....	96 1/2 @ 97 1/2
Feed, fair to good.....	92 1/2 @ 95
Brewing, No. 1 to choice.....	97 1/2 @ 1 00
Chevalier, No. 1 to choice.....	1 10 @ 1 20
Chevalier, poor to fair.....	92 1/2 @ 1 05

## OATS.

Quotable values are at much the same high range as for some time past, but trade is slow. Buyers have poor success in obtaining noteworthy concessions in their favor and refuse to purchase beyond most immediate and pressing necessities at full current rates demanded. That the market will be a dragging one until oats become more plentiful and cheaper is altogether probable.

White Oats, fancy feed.....	1 40 @ 1 45
White, good to choice.....	1 35 @ 1 40
White, poor to fair.....	1 27 1/2 @ 1 32 1/2
Gray, common to choice.....	1 27 1/2 @ 1 35
Milling.....	1 37 1/2 @ 1 42 1/2
Surprise, good to choice.....	1 45 @ 1 50
Black Russian.....	1 15 @ 1 32 1/2
Red.....	1 22 1/2 @ 1 40

## CORN.

Business doing in this cereal is of light proportions, present supplies being of too limited volume to admit of very extensive operations. Values continue on a high plane, but only for good to choice are current quotations obtainable. Seriously damp or otherwise defective corn is going at lower and irregular figures.

Large White, good to choice.....	1 35 @ 1 45
Large Yellow.....	1 35 @ 1 45
Small Yellow.....	1 45 @ 1 50

## RYE.

Values are fairly steady, but there are no evidences at present of any great amount of business being transacted.

Good to choice.....	92 1/2 @ 95
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## BUCKWHEAT.

Nothing doing in a wholesale way. Demand and offerings are both at the moment too light to allow of any noteworthy trading.

Good to choice.....	1 55 @ 1 70
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## BEANS.

The unsettled condition last noted as existing in this market for most varieties of white beans is still prevailing, with immediate prospects not encouraging for any noteworthy stability or firmness being soon developed. Values are likely to go to lower levels than are warranted, as is frequently the case on a soft and declining market. Pea beans are not plentiful and are not going at what can be termed low figures, but this is about the only exception in white beans. Limas are ruling quiet at the reduced quotations, buyers taking hold very sparingly. Colored beans are as a whole faring much better than white varieties. Pinks and Bayos are commanding steady figures and have been lately in fair request. Black-eyes are in light stock and in few hands, and in a small way are commanding comparatively stiff prices.

Pea, fair to good, 100 lbs.....	3 25 @ 3 50
Small White, good to choice.....	2 25 @ 2 50
Lady Washington.....	2 15 @ 2 25
Pinks.....	1 85 @ 2 00
Bayos, good to choice.....	2 40 @ 2 60
Reds.....	2 00 @ 2 25
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	3 50 @ 3 75
Black-eye Beans.....	4 25 @ 4 50
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

## DRIED PEAS.

Market is liberally supplied with Green or Blue peas, and offerings are meeting with light demand, especially at full current figures. Niles are not in heavy stock, but there are enough of these to accommodate the immediate limited inquiry. Quotations are unchanged, but are based mainly on asking rates.

Green Peas, California.....	1 50 @ 2 00
Niles Peas.....	1 75 @ 1 80

## WOOL.

Considerable wool is coming forward from the southern counties, but most of it represents interior purchases, leaving little on the local market for buyers. Prices reported being paid in the interior are in the main relatively higher than quotable here. This has been a common experience in seasons past, especially where there are virtually no carry-over stocks, as is the case this spring. As soon as there is anything upon which to base values for Humboldt and Mendocino

county wools the quotations will be given in these columns.

## SPRING.

Northern Cal., free.....	14 @ 16
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	12 @ 15

## HOPS.

The market here is exceedingly quiet, and in a wholesale way is not quotable over 15c., although dealers are quoting up to 17 1/2c. The Oregon growers' pool is reported to have sold its London shipment, of about 4,070,000 pounds, at an average of 11 1/2c. per pound. When the shipment was made the price in Oregon was 10 1/2c., but later it rose to 14 1/2c., or 2c. above the best price received in London.

## HAY AND STRAW.

Market for hay has been fairly steady for stable kinds the past week, but the tendency was rather against than in favor of the selling interest. Very little undue pressure to realize would have sent values to lower levels. Alfalfa was not in heavy receipt, and being mainly under strong control, prices for this description were quite well maintained at the quoted range. Straw moved in a moderate way at about same figures last quoted.

Wheat, good to choice.....	9 00 @ 12 00
Wheat and Oat.....	9 00 @ 11 00
Tame Oat.....	8 50 @ 10 50
Wild Oat.....	8 00 @ 9 50
Barley and Oat.....	8 00 @ 10 00
Alfalfa.....	9 00 @ 11 00
Clover.....	7 00 @ 8 50
Compressed.....	9 00 @ 12 00
Straw, 3/4 bale.....	40 @ 65

## MILLSTUFFS.

There were no heavy supplies of mill offal of any description and values were maintained close to prices of preceding week, but demand was not brisk at full current figures, dealers expecting an easier market soon. Rolled Barley was firmly held. Prices for Milled Corn ruled fairly steady.

Bran, 1/2 ton.....	15 00 @ 16 00
Middlings.....	18 00 @ 20 00
Shorts, Oregon.....	16 00 @ 17 00
Barley, Rolled.....	20 00 @ 21 00
Cornmeal.....	28 50 @ 29 50
Cracked Corn.....	29 00 @ 30 00

## SEEDS.

Movement in the seeds quoted herewith is not of heavy volume, most kinds being in too limited stock to admit of very extensive trading. Quotations are based mainly on values realized in a jobbing way.

	Per cwt.
Alfalfa, Cal.....	10 50 @ 11 00
Alfalfa, Utah.....	11 00 @ 12 00
Flax.....	2 25 @ 2 50
Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 50 @ 2 65
	Per lb.
Canary.....	3 1/4 @ 3 1/2
Rape.....	1 1/2 @ 2 1/4
Hemp.....	3 1/4 @ 3 1/2

## BAGS AND BAGGING.

The Grain Bag market is quiet, but at same time presents a firm tone. Dealers are not doing much talking at present, but expect to be favored with an opportunity to advance prices at harvest time. There is seldom a season when an attempt is not made to boom bags in the summer months, and seldom has the outlook at corresponding date been more encouraging for successfully crowding up Grain Bag values when the active demand sets in.

Calcutta Grain Bags, buyer June-July.....	6 1/2 @ 6 1/4
Calcutta Grain Bags, spot.....	6 @ 6 1/2
San Francisco Grain Bags, 22x36, spot.....	6 @ 6 1/2
San Quentin Bags, 100.....	5 55 @
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	8 1/2 @
Gunnies.....	— @
Bean Bags.....	5 1/4 @ 5 1/2
Fruit Sacks, cotton, three sizes.....	5 1/2 @ 6, 6 1/2
Fruit Sacks, Jute.....	7 @ 7 1/2

## HIDLS, PELTS AND TALLOW.

Dry Hides are commanding steady prices for shipment East. Quotations for Wet Salted remain practically as last noted, but market is not firm, and shading of rates is among the strong probabilities of the near future. Business doing in Pelts is at generally unchanged figures. Tallow is meeting with fair custom at tolerably steady values.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 55 lbs.....	10 1/4 @	8 1/2 @
Medium Steers, 48 to 55 lbs.....	9 @	7 1/2 @
Light Steers, under 48 lbs.....	8 @	7 @
Heavy Cow Hides, over 50 lbs.....	9 @	7 @

Light Cow Hides, under 50 lbs.....	8 @	7 @
Stags.....	6 @ 6 1/2	— @
Wet Salted Kip.....	8 @	7 @
Wet Salted Veal.....	9 @	7 @
Wet Salted Calf.....	10 @	9 @
Dry Hides.....	16 @	14 @
Dry Kip and Veal, 11 to 16 lbs.....	14 @	12 @
Dry Calf, under 4 lbs.....	17 @	15 @
Salted Horse Hides, large.....	2 75	@
Salted Horse Hides, medium.....	2 25	@ 2 50
Salted Horse Hides, small.....	1 25	@
Dry Horse Hides, large.....	1 75	@
Dry Horse Hides, medium.....	1 50	@
Dry Horse Hides, small.....	1 00	@
Dry Colts' Hides.....	50	@
Pelts, long wool, 1/2 skin.....	80	@ 1 20
Pelts, medium, 1/2 skin.....	65	@ 75
Pelts, short wool, 1/2 skin.....	40	@ 60
Pelts, shearing, 1/2 skin.....	15	@ 30
Deer Skins, best summer.....	35	@
Deer Skins, good medium.....	—	@ 30
Deer Skins, thin winter.....	—	@ 21
Elk Hides.....	10	@ 12
Tallow, good quality.....	5 1/2	@
Tallow, No. 2.....	4 1/2	@ 4 1/2
Goat Skins, perfect.....	30	@ 37 1/2
Goat Skins, small.....	10	@ 20
Kid Skins.....	5	@ 10

## HONEY.

Advices from the interior of this State indicate a big yield of honey this year and an early season. While quotable values remain in about same position as last noted, the market cannot be termed firm. Buyers are operating lightly, anticipating easier values when new crop begins to arrive freely.

Extracted, White Liquid.....	5 @
Extracted, Light Amber.....	4 1/2 @
Extracted, Amber.....	4 @
White Comb, 1 lb frames.....	10 @ 12 1/2
Amber Comb.....	7 @ 10
Dark Comb.....	6 @ 7

## BEESWAX.

Spot offerings are of light proportions. Previously quoted values are being maintained, with demand fair.

Good to choice, light, 1/2 lb.....	25 @ 28
Dark.....	24 @ 25

## LIVE STOCK AND MEATS.

Beef is in fair supply, but demand is sufficient to prevent values sagging. Prices for Mutton remain at about same range current for some weeks past and are not likely to fluctuate materially in the near future. Heavy wethers tended downward. Veal of desirable age brought good prices. Lamb was in increased receipt and tendency was to a less elevated plane of values than lately current. Hogs of desirable sizes brought slightly stiffer figures than for a week or two preceding, under rather light receipts. Dairy fattened hogs are expected to arrive soon in considerable quantity, when values will likely recede a little.

Beef, first quality, dressed, net 1/2 lb.....	7 @ 7 1/2
Beef, second quality.....	7 @
Beef, third quality.....	6 @ 6 1/2
Mutton—ewes, 8 @ 8 1/2 cwt.....	8 1/2 @ 9
Hogs, hard grain fed, 125 to 200 lbs.....	6 1/2 @ 6 3/4
Hogs, small, fat.....	6 1/2 @ 6 1/2
Hogs, large, hard, over 200 lbs.....	5 1/2 @ 6
Hogs, soft or acorn fed.....	5 @
Hogs, country dressed.....	7 1/2 @ 7 1/2
Veal, small, 1/2 lb.....	8 @ 8 1/2
Veal, large, 1/2 lb.....	8 @ 9
Lamb, spring, 1/2 lb.....	11 1/2 @

## POULTRY.

There have been no heavy arrivals of either domestic or Eastern poultry the current week, and the market as a whole has ruled firm. It was the exception where desirable offerings, either young or old, did not meet with prompt custom at full current figures. The demand was mainly for chickens, and sales of same were effected at a quotable advance of 50c @ \$1 per dozen.

Turkeys, dressed, choice.....	15 @ 18
Turkeys, alive, Hens, 1 lb.....	16 @ 17
Turkeys, alive, Gobblers, 1 lb.....	14 @ 15
Hens, California, 1/2 dozen.....	4 50 @ 5 00
Roosters, old.....	4 50 @ 5 00
Roosters, young (full-grown).....	6 50 @ 7 50
Fryers.....	5 50 @ 6 00
Broilers, large.....	5 00 @ 5 50
Broilers, small to medium.....	2 50 @ 4 00
Ducks, old, 1/2 dozen.....	5 00 @ 6 00
Ducks, young, 1/2 dozen.....	7 00 @ 8 00
Geese, 1/2 pair.....	1 50 @ 1 75
Goslings, 1/2 pair.....	2 25 @ 2 50
Pigeons, old, 1/2 dozen.....	1 50 @ 1 75
Pigeons, young.....	2 00 @ 2 25

## BUTTER.

Demand from Northern coast points was less active than for a week or two preceding, and with receipts showing some increase, the market presented an easier tone. Dealers are preparing to pack and store against future needs. It is not likely that values for desirable qualities will decline much below existing levels.

Creamery, extras, 1/2 lb.....	20 @ 21
Creamery, firsts.....	19 @ 20
Creamery, seconds.....	— @
Dairy, select.....	19 @ 20
Dairy, firsts.....	18 @ 19
Dairy, seconds.....	— @
Mixed store.....	16 @ 17
Creamery in tubs.....	— @
Pickled Roll, 1/2 lb.....	— @
Firkin, California, choice to select.....	— @
Firkin, common to fair.....	— @

## CHEESE.

No changes of consequence have oc-



current in the cheese market since date of last report. New domestic is arriving in moderate quantity, and most receivers are more anxious to sell than to hold. Old is being steadily held. Eastern market is lightly stocked and very firm.

California, fancy flat, new..... 9 1/2 @ 10  
California, good to choice old..... 9 1/2 @ 10 1/2  
California, fair to good..... — @ 9 1/2  
California, "Young Americas"..... 9 @ 10 1/2

#### EGGS.

Large quantities are going into cold storage, the speculative demand being the main support of the market at present. Prices remain without appreciable change. A wider range of values will be likely soon experienced.

California, select, large, white and fresh. 15 1/2 @ 16  
California, select, irregular color & size. 14 1/2 @ 15 1/2  
California, good to choice store..... 14 @ 15  
California, common to fair store..... — @ —  
Eastern, good to choice..... — @ —  
Cold Storage..... — @ —

#### VEGETABLES.

Fresh vegetables are beginning to arrive freely, especially Asparagus, Peas and Rhubarb, all of these going at reduced figures. The tendency of prices on Tomatoes and Peppers was also in favor of buyers. Onions were in very liberal supply for this late date, and market lacked firmness, especially for offerings which were not strictly select in every particular.

Asparagus, 1/2 box..... 1 25 @ 2 50  
Beans, String, 1/2 lb..... 10 @ 12 1/2  
Beans, Wax, 1/2 lb..... 8 @ —  
Cabbage, choice garden, 100 lbs..... 50 @ —  
Cauliflower, 1/2 dozen..... — @ —  
Cucumbers, Bay, 1/2 large box..... — @ —  
Egg Plant, Los Angeles, 1/2 lb..... 20 @ —  
Garlic, 1/2 lb..... 1 1/2 @ 2 1/2  
Mushrooms, 1/2 lb..... — @ —  
Onions, Yellow Danver, 1/2 cental..... 1 50 @ 2 15  
Peas, Sweet garden, 1/2 lb..... 2 1/2 @ 3 1/2  
Peppers, Green, Los Angeles, 1/2 lb..... 8 @ 12 1/2  
Peppers, Bell, 1/2 box..... — @ —  
Rhubarb, 1/2 box..... 50 @ 1 00  
Squash, Marrowfat, 1/2 ton..... 20 00 @ 25 00  
Summer Squash, 1/2 box..... 75 @ 1 50  
Tomatoes, 1/2 box..... 75 @ 1 25

#### POTATOES.

Arrivals from Oregon were lighter than for several weeks preceding, and are expected to be of only moderate volume during the balance of the season. Choice to select Burbanks brought better average prices than last quoted. Seriously defective qualities, as is almost invariably the case, dragged badly at low prices, and sold by the sack, as a rule, instead of by weight. Most of the stock of this sort was considered well placed at anything over 75c per sack. Seed potatoes were in fair request, the Early Rose going for seed coming mainly from British Columbia. Sweets were in very light supply, stocks of 1901 crop being nearly exhausted.

Burbanks, Salinas, 100 lbs..... — @ —  
River Burbanks in sacks, 1/2 cental..... 1 25 @ 1 40  
Petaluma and Tomales Burbanks..... 1 40 @ 1 50  
Oregon Burbanks..... 1 35 @ 1 75  
River Reds..... 1 40 @ 1 50  
New Potatoes, 1/2 lb..... 2 1/2 @ 3 1/2  
Sweets, Merced, 1/2 cental..... 1 90 @ 2 25

#### The Fruit Market.

##### FRESH FRUITS.

Strawberries are not arriving regularly or in large quantity, but will soon be in sufficient supply to be quotable in the regular way. A few were sold within range of \$1 75 @ 2 50 per drawer, as to quality and size. Apples out of cold storage are still offering in considerable quantity, and are being held as about last quoted, but are not moving freely, and inquiry which exists is almost wholly for choice to select.

Apples, fancy, 1/4 tier box..... 1 75 @ 2 25  
Apples, good to choice, 1/2 lb box..... 1 25 @ 1 75  
Apples, common to fair, 1/2 lb box..... 75 @ 1 00

##### DRIED FRUITS.

The market for evaporated and dried fruits continues very quiet, and all things considered, it would be phenomenal to have it otherwise. Trade in most kinds is necessarily restricted to small proportions, owing to lightness of stocks now remaining. There are no evidences of noteworthy quantities of dried fruit of any sort being now in the hands of growers. Stocks of most descriptions at present held by jobbers are of quite moderate proportions, and prospects are good for a pretty thorough clean-up within the next few months or before the coming season opens. Quotable values remain practically without change, but the market as a whole shows firmness, the strength being more particularly pronounced on Apples, Peaches and Pears. The heaviest remaining stocks are Prunes of 1900 crop, and on this fruit buyers in this center are not able to obtain any noteworthy concessions from recent asking rates. The quotable range on old Prunes may be said to be 1 1/2 @ 3c for the small to medium sizes, these constituting the bulk of offerings. There are no large quantities of 1901 Prunes obtainable, and market for this fruit shows steadiness on the 3 1/2 @ 3 1/2c basis for the four sizes. Vacaville Apricots of coming crop

are reported offering for early July delivery at 7c in the sweat box.

##### EVAPORATED OR BLEACHED.

Apricots, Royal, choice, in sacks, 1/2 lb..... 9 @ 10  
Apricots, Moorpark..... 10 @ 12  
Apples, in 50-lb boxes, rings, pressed, fancy..... 8 1/2 @ 9  
Apples, 50-lb boxes, rings, pressed, good to choice..... 7 1/2 @ 8 1/2  
Nectarines, 1/2 lb..... 5 @ 6  
Peaches, unpeeled, fancy..... 8 @ 9  
Peaches, unpeeled, choice..... 6 1/2 @ 7 1/2  
Peaches, peeled, in boxes..... 12 @ 14  
Pears, halves, choice to fancy..... 7 @ 10  
Plums, Red and Black, pitted..... 5 @ 6  
Plums, White and Yellow..... 5 @ 6  
Prunes, 4 sizes, in bags, 3 1/2 @ 3 3/4c; 50-lbs, 4 1/2 @ 4 3/4c; 60-70s, 4 @ 4 1/4c; 70-80s, 3 1/2 @ 3 3/4c; 80-90s, 3 @ 3 1/2c; 90-100s, 3c @ —; these figures for 1901 crop.

##### COMMON SUN-DRIED.

Apples, sliced..... 4 @ 5  
Apples, quartered..... 5 1/2 @ 5 1/2  
Peaches, unpeeled..... 6 @ 6 1/2  
Pears, prime halves..... 5 @ 5 1/2  
Plums, unpitted, 1/2 lb..... 1 1/2 @ 2 1/2

##### RAISINS.

The market is without new or noteworthy feature. Offerings and demand are both light. The limited jobbing trade in progress is at practically unchanged values.

Following are the prices for 1901 crop in carload lots:

Loose Muscatels..... Per lb.  
4-crown..... 6 1/2 @ —  
3-crown..... 6 @ —  
2-crown..... 5 1/2 @ —  
Seedless Muscatels..... — @ —  
Seedless Sultanas..... 5 1/2 @ —  
Thompson's Seedless, bleached..... 8 1/2 @ 9 1/2  
Seeded—  
3-crown, 1-lb. carton..... 7 1/2 @ 8  
2-crown, 1-lb. carton..... 6 1/2 @ 6 1/2  
London Layers, 20-lb. boxes—  
2-crown..... — @ —  
3-crown..... — @ —

##### CITRUS FRUITS.

Oranges were in better supply than preceding week, but values were in the main well sustained at previously quoted range. Demand was mainly for medium size Navels, and these commanded best figures. Lemon market did not show much life. Quotable values were unaltered, but only for strictly choice to select did the market display any firmness. Limes continued in good supply and were fully as cheap as last quoted.

Oranges—Navels, 1/2 box..... 1 25 @ 3 25  
Mediterranean Sweet..... 1 75 @ 2 25  
Tangerine, quarter box..... 75 @ 1 25  
Seedlings, 1/2 box..... 1 25 @ 1 75  
Lemons—California, select, 1/2 box..... 2 25 @ 2 75  
California, good to choice..... 1 50 @ 2 00  
California, common to fair..... 75 @ 1 25  
Grape Fruit, 1/2 box..... 1 25 @ 2 50  
Limes—Mexican, 1/2 box..... 4 00 @ 4 50

##### NUTS.

Almonds are in very light stock, and owing to damage to foreign crop the market is strong. Walnut market is decidedly firm for good to choice, with present offerings of slim proportions. Peanuts are moving in a moderate way at quotably unchanged values.

California Almonds, shelled..... 16 @ 19  
California Almonds, paper shell, 1/2 lb..... 12 @ 13  
California Almonds, soft shell..... 9 @ 10  
California Almonds, hard shell..... 5 @ 6  
Cal. White Walnuts, No. 1 soft shell..... 10 @ 12  
Cal. White Walnuts, No. 2 soft shell..... 8 @ 10  
Cal. White Walnuts, No. 1 hard shell..... 9 @ 10  
Cal. White Walnuts, No. 2 hard shell..... 7 @ 8  
Peanuts, California, fair to prime..... 4 1/2 @ 5 1/2  
Peanuts, Eastern, hand-picked..... 5 1/2 @ 6  
Pine Nuts..... 5 @ 6

##### WINE.

The market shows virtually the same condition as previously noted. Dry wines of last year's vintage remain quotable at 22 @ 26c per gallon wholesale for fair to choice. There are no evidences of much doing in the way of transfers from first hands. Offerings from growers are not heavy, and it is the exception where any pronounced pressure to realize is being exerted. There is no active inquiry, however, from the wholesale trade, a waiting policy being pursued, the heavy operators expecting thereby to be able to operate to better advantage than by going after offerings and making bids unsolicited.

HAIRY VETCH FOR HENS.—Harriet W. Ashby says that she considers hairy vetch an excellent green feed for fowls, and adds that "they are very fond of the vetch and will consume the whole plant except the coarser stems, even when the vines have attained a length of 3 or 4 feet. I demonstrated this fact with some cockerels placed in confinement last summer. The vetch had at that time nearly matured seed and the vines were long and coarse. The cockerels ate leaves, pods, tendrils and all of the tender parts of the stem."

EIGHTEEN HUNDRED ACRES IN SUGAR BEETS.—Santa Rosa Press - Democrat: Superintendent Raaf of the California-Hawaiian Sugar Company's big farm at Reclamation states that at least 1800 acres of land will be planted by the company in sugar beets this season. Last year a big acreage of beets was planted which yielded a splendid crop.

## CERTIFICATE OF PARIS GREEN That conforms with the Requirements of Law.

College of Agriculture, Berkeley, Cal., March 27th, 1902.

### Examination of Lavanburg's Paris Green, No. 610.

Mark: Paris Green, Redington & Co., San Francisco, Cal.

#### CHEMICAL ANALYSIS.

Free Arsenious Oxid, or White Arsenic..... per cent, 2.00  
Free Arsenious Oxid, or White Arsenic, limit of safety..... per cent, 4.00  
Total Arsenious Oxid..... per cent, 58.70  
Total Arsenious Oxid required by law..... per cent, 50.00

(Signed) GEO. E. COLBY, Assistant Chemist.

(Signed) E. W. HILGARD, Director Experimental Station.

Send your orders or Write for Quotations to REDINGTON & COMPANY, 23-25-27 Second St., SAN FRANCISCO, CAL.

#### Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, 1/2 sacks.....	48,021	5,245,171
Wheat, centals.....	78,934	8,422,801
Barley, centals.....	131,848	5,465,849
Oats, centals.....	2,085	739,831
Corn, centals.....	1,375	91,574
Rye, centals.....	200	262,726
Beans, sacks.....	7,782	634,270
Potatoes, sacks.....	22,408	1,174,389
Onions, sacks.....	2,582	176,707
Hay, tons.....	2,504	117,912
Wool, bales.....	1,519	47,487
Hops, bales.....	7	8,777

#### EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, 1/2 sacks.....	31,520	3,726,406
Wheat, centals.....	96,876	7,787,270
Barley, centals.....	49,762	3,898,218
Oats, centals.....	21	2,771
Corn, centals.....	182	9,387
Beans, sacks.....	165	23,763
Hay, bales.....	10	12,920
Wool, pounds.....	..	545,331
Hops, pounds.....	684	490,921
Honey, cases.....	26	6,019
Potatoes, pack's.....	216	44,436

#### California Dried Fruit at New York.

NEW YORK, April 9.—Evaporated apples, common, 7 @ 8 1/2c; prime wire tray, 9 1/2 @ 9 1/2c; choice, 9 1/2 @ 10c; fancy, 10 1/2 @ 11c.  
California Dried Fruits.—Demand showing some improvement. Market is firm at the quotations.  
Prunes, 3 1/2 @ 7c.  
Apricots, Royal, 10 @ 13c; Moorpark, 11 @ 14c.  
Peaches, unpeeled, 8 @ 10c; peeled, 14 @ 18c.

#### New Patents.

DEWEY, STRONG & Co.'s SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING MARCH 25, 1902.

696,220.—EASEMENT—C. O. Anderson, Los Angeles, Cal.  
696,128.—CLOTHES DRIER—T. M. Anderson, New Whatcom, Wash.  
695,905.—ANIMAL TRAP—G. Brown, Santiam, Or.  
696,389.—GANG PLOW—H. Bryan, Modesto, Cal.  
696,319.—CIRCUIT CLOSER—D. L. Demorest, Tacoma, Wash.  
696,136.—SHACKLE—E. F. Diamond, Oakland, Cal.  
696,323.—ORE FURNACE—C. Fitzgerald, S. F.  
696,031.—CANNING DEVICE—W. H. Fredericks, Portland, Or.  
696,172.—CIRCUIT BREAKER—A. J. Higgs, Colton, Cal.  
696,141.—ADDING MACHINE—A. Hoch, Alameda, Cal.  
696,173.—ADDING MACHINE—A. Hoch, Alameda, Cal.  
696,239.—BED BOTTOM—J. Hoey, S. F.  
696,341.—DISPLAY CABINET—A. L. Johnson, San Luis Obispo, Cal.  
696,345.—MASSAGE MACHINE—H. E. Law, S. F.  
696,248.—LIFE SAVING DEVICE—W. H. Martin, S. F.  
696,251.—EXPLOSIVE ENGINE—J. D. McFarland, Jr., S. F.  
696,065.—RHEOSTAT—M. L. Miller, Pasadena, Cal.  
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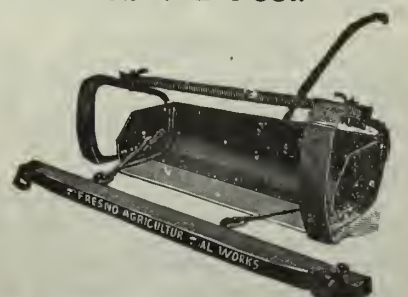
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## Patrons of Husbandry.

### Farmers' Mutual Fire Insurance.

From an address by Mr. F. E. KELLOGG, of Goleta, at a farmers' meeting held to organize a mutual fire insurance company under the California law.

The general plan of farmers' mutual fire insurance is for the farmers to form a mutual insurance association, to be incorporated and chartered according to the laws of the State. Each farmer pays a small admission fee to become a member, and sometimes a very small premium in advance, say, about one-fifth the usual rate, the fees and premium being for the purpose of meeting unavoidable incidental expenses, and any small loss that may occur. The secretary of the association is usually the only salaried officer, his salary being fixed by the board of directors. His chief duty is to insure, in the name of the association, the buildings belonging to the members. The directors are paid by the day for actual services rendered.

The plan of insurance is simply this: If any member of the association meets with a loss by fire, if there is not money enough in the treasury from the admission fees and a small advance premium charged to cover the loss, then each member is required to pay his pro rata share of the loss—that is to say, the assessment will be levied on each member in proportion to the amount of insurance he carries. If no fire occurs, then there will be no assessment. It often happens that these mutual farmers' insurance associations run for years without any assessments, farm fires being of such rare occurrence that the losses are met by the small charges made for admission of members.

On this plan, when a fire does occur, the assessment amounts to only the actual loss. It furnishes perfectly reliable insurance at cost, with absolutely no profits to any one.

Another good feature is this: In a community where this kind of insurance prevails, every farmer becomes interested in preventing or extinguishing fires, whether on his own or on his neighbor's premises.

I suppose it is not necessary to prove the desirability of practicability of fire insurance itself, for among business men this fact is almost universally admitted, even by the enormously high rates rates charged by the stock companies.

I take it for granted that the only things requiring a demonstration are, that by the organization of a farmers' mutual fire insurance association you can yourselves insure your own buildings more cheaply, and just as securely as it is being done by the stock companies.

I think these are not very hard propositions to demonstrate. First, as to the comparative cheapness, let us briefly investigate.

The insurance companies are in the business solely for the profits, the greatness of which are indicated by their magnificent buildings, and the millionaires among their stockholders, whereas mutual insurance is exactly at cost, no one deriving any profit.

If insured in the companies, you must from year to year pay the premiums on your policies, whether any fires occur or not, and these premiums are put at a figure which not only represents the risk or probable actual cost of insurance, as determined by a large number of cases, extending over a long period

of time, but in addition thereto it represents the immense cost of advertising, and all the enormous profits of the companies, which is the very purpose for which they exist. While, on the other hand, if insured in the farmers' mutual, you have almost nothing to pay unless a fire should occur, and then you only pay your pro rata assessment necessary to cover the actual loss occasioned by the fire.

Hence, in the very nature of things, the mutual is cheaper than the stock company. But we are by no means without statistical proof in the matter, for the mutual plan is no untried experiment, but has been in successful operation for more than half a century in some of the States east of the Rocky mountains, and is also in successful operation in some of the counties of California. These mutual associations have given insurance in some cases at a cost of only one-fourth the rates of stock companies.

The report of the Insurance Superintendent of the State of Illinois for the year 1898 states that in the mutual associations of that State, for the preceding year, there was over \$128,000,000 of insurance in force, divided among nearly 100,000 policy holders, and at an average cost of 22 cents for each \$100 of insurance, while the average cost in the joint stock companies was \$1.07 for each \$100 of insurance—almost five times as great.

In the East, where three-fourths of the farm fires are from lightning, mutual insurance only costs in some cases from 15 to 20 cents per \$100. But suppose it to be 22 cents per \$100, as in Illinois, we think it is a perfectly reasonable conclusion that in Santa Barbara county, where thunder storms rarely occur, our insurance on the mutual plan should not exceed 10 cents on the \$100, which would only be a small fraction, about one-eighth, of the rates charged by the stock companies—for their charge on the ordinary farm house is from 75 to 80 cents per \$100 per annum. But fortunately we are not without direct evidence as to what the cost of farmers' mutual insurance actually is in a neighboring southern California county. The report of the Secretary of the Los Angeles Farmers' Mutual Insurance Association, as published in the Fruit World of Jan. 18, 1902, shows that the rate for the preceding year was only 8 cents on the \$100.

Now this is only about one-tenth the ordinary rate charged by the stock companies, and there is no reason why mutual insurance should cost any more in Santa Barbara than in Los Angeles county.

Second—And now, having shown that mutual insurance is incomparably cheaper than stock company insurance, it only remains to be shown that it is equally secure.

As to the reliability of these mutual associations, it is declared by those who have investigated the matter that "not one has ever failed." Experience has fully demonstrated that this kind of insurance is just exactly as secure as that of the stock companies. The agents of the stock companies tell us that the farmers' mutual will only end in failure. It is very easy to understand why they wish people to think that way. You may rest assured that

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it is not their anxiety for the welfare of the farmer, but solicitude for their own interests, which makes them so vehement in their denunciations. The stronger their opposition the greater the evidence that they know full well that the organization of an association means the permanent loss to them of much valuable insurance, which simply means that they believe the association will be an unqualified success. For why should they so vehemently oppose it if, as they tell us, it can only end in failure. The only thing that can make it a failure is the opposition or indifference of the farmers themselves, and this the agents of the stock companies know full well, and hence they make every endeavor to excite the opposition, or cause the apathy of the farmer.

### Tulare Grange.

TO THE EDITOR:—At the meeting on Saturday four candidates for the degrees were elected. The degrees will be conferred at the next meeting, the 19th.

A vote of thanks was passed to all who had kindly contributed funds for defraying the expenses of the last Farmers' Institute and to the papers for notices of the meeting and reports of papers and proceedings.

It was resolved to hold a picnic, time and place to be selected at the next meeting.

The consideration of the question of the day, "What constitutes a good education," was taken up. Sisters Morris and Fleming each read a well-written paper, both very favorably commented on by the members.

The questions drawn from the box were: "Are lawyers as a class true Americans?" "What is best to spray rose bushes with for green lice?" "Would there be pear blight if there were no bees?"

It was held the study of law in no way prevents a man from being a true American. American lawyers are true Americans. Rose bushes having green lice on may be treated by dusting with sulphur, or the lice may be washed off the first thing in the morning with a strong stream of water applied by means of hose and nozzle.

Pear blight was not originated by bees and in no way are bees responsible for its existence. Pear blight is spread by the wind, by birds and by insects, including bees. It is a disease incidental to pomaceous fruits, and would exist and spread if there was not a bee in the United States.

The question for next meeting is: "Success is more dependent upon ability than upon opportunity." J. T.

### Oakland Grange.

TO THE EDITOR:—Oakland Grange Reading Circle was most enjoyably entertained on Tuesday, April 1st, by Mr. and Mrs. Chas. W. Emery, of East Oakland. The subject for the afternoon was "Ian Maclaren." Selections were read from "Beside the Bonnie Brier Bush," and "Afterwards." During the half hour devoted to forestry, the president, Mrs. D. T. Fowler, read interesting articles on the spool and match industries. A bountiful repast was served at 7 P. M., and the remainder of the evening spent in games, interspersed with speeches from Prof. D. T. Fowler and recitations by Mrs. White, Mrs. Grant Miller and Mrs. Amos Dow. NITA.



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## THE SWINE YARD.

## Red Hogs.

TO THE EDITOR:—In your issue of March 13th is an article from J. L. Bourland speaking of the Duroc hog and his qualities. The first red hog I ever saw was a sow which came from the Sandwich Islands in 1852, in Sacramento City. We bought her, with a lot of others, at the time of the flood, 1852, and took her with the others across the Sacramento river to Buckeye Flat in Yolo county. She got away and swam the Sacramento river and got back to our place on Fourteenth street. She was a good hog and raised many a pig afterwards. Hogs were then worth \$25 each. The next red hogs I saw at the World's Fair, Chicago, in 1893. The owner claimed them a distinct breed and called them the Duroc. They were fine animals and ranked with many of the other breeds on exhibition. Several years ago (about ten) I had a lot of sows at my dairy place on the tule and I had no boar with them. Subsequently they had litters of pigs and among them were several red ones. The sows were black. I have changed my boars often since then (always using the Poland-China or Berkshire), and still I always get some red pigs. None of my neighbors have them. I find them to be rather delicate, but when grown are good hearty hogs. I would not breed to them. JAMES MILLAR.

Dixon, Solano county, Cal.

Red hogs were common among the old Berkshires and reddish color is quite apt to reappear among hogs descended from the older strains of Berkshires. Careful selection has almost removed the chance of red in the newer improved strains. The Durocs of the present day are as different from the old red hogs as the Berkshires themselves and are highly improved, but selection with them has been toward promoting the red color instead of eliminating it. Our correspondent's observations are very interesting, but they have almost as little bearing upon the modern Duroc as upon the modern Berkshire. All the leading breeds have been nearly made over during the last quarter of a century.

## SAN FRANCISCO VETERINARY COLLEGE.

Next session will begin June 9th. Catalogues sent upon application. M. L. PANCOAST, Secretary, 510 Golden Gate Ave.

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## University of California Summer Session.

More students spent last summer at the University of California than at the summer session of any other American university except Harvard. The 797 students were brought together by a desire to study under some of the foremost scholars of America—men from the Universities of California, Harvard, Columbia, Cornell, Chicago and Stanford—by the charm of a Pacific summer, for Berkeley is one of the coolest and most delightful of midsummer abiding places, and by the manifold interest of San Francisco, which is only fifty minutes distant, with a 10-cent fare.

The plans for the next summer session of the University of California, from June 26 to August 6, 1902, provide for instruction in twenty-two departments—philosophy, education, history and political science, political economy, Greek, Latin, English, German, French, Spanish, Italian, art, library science, mathematics, physics, chemistry, botany, mineralogy, agriculture, forestry, irrigation and physical culture.

Besides a number of men from the permanent faculty (among whom will be Professors Howison, Wickson, Schilling, Plehn, Richardson (Dean), Lewis, Babcock and Wells), the summer faculty will include Josiah Royce, professor of the history of philosophy at Harvard; Henry Morse Stephens, who has just resigned the chair of modern European history at Cornell to become professor of history and director of university extension in the University of California; B. E. Fernow, long in charge of the forestry work of the United States Government, and now director of the New York State College of Forestry; Supt. F. Louis Soldan of St. Louis; William A. Henry, dean of the College of Agriculture of the University of Wisconsin; J. Mark Baldwin of Princeton, editor of the new Dictionary of Philosophy and Psychology; Robert A. Harper, professor of botany in the University of Wisconsin; F. N. Scott of Michigan and Charles Sears Baldwin of Yale for English composition; Arthur Lachman, dean of the College of Science and Engineering of the University of Oregon, for chemistry, and Ernest George Merritt of Cornell for physics, also a number of special lecturers.

Men and women are admitted to exactly equal privileges. Qualified persons may enroll for the summer session without examination. Credit toward a degree will be given for satisfactory work. The full resources of libraries, museums, laboratories and gymnasiums and other athletic equipments will be available for the summer students.

Liberal reduced rates have been offered by the railroads to attendants from all parts of the country.

Prospective students should file their applications before June 16th. If a request is sent to the recorder of the faculties, Berkeley, Cal., full information will be forwarded concerning courses, living accommodations, railroad rates and similar matters.

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320 acres, Hayes Co., Neb. Good buildings. Land well fenced. 15 miles to R. R. \$2,500.

98 acres, Riverside Co., Cal. Good buildings. Orchard of 200 trees. 20 acres timber. Mining claim, farm implements and furniture go with place. 6 miles to R. R. \$10,000.

162 acres, Cascade Co., Mont. Excellent buildings. Good spring. Land well fenced. 4 miles to R. R. \$1,250.

440 acres, Larimer Co., Colo. Good buildings. Plenty small fruits. Some timber. 2 streams through land. 14 miles to R. R. \$5,280.

12 acres, Pueblo Co., Colo. Good buildings. 6 acres orchard. Land well fenced. 4½ miles to R. R. \$2,500.

1690 acres, Hayes Co., Neb. 60 acres timber. Good buildings. Orchard. Stream on land. 20 miles to R. R. \$15,000.

160 acres, Washington Co., Colo. No buildings. 6 miles to R. R. \$560.

160 acres, Arapahoe Co., Colo. No buildings. Very fertile soil. 22 miles to R. R. \$8 0.

160 acres, Pembina Co., N. D. 60 acres timber. Small stream on land. Fair buildings. Land well fenced. 6 miles to R. R. \$3,200.

475 acres, Harrison Co., Iowa. 15 acres tim-

ber. Good buildings. Stream on land. 3 acres orchard. 3½ miles to R. R. \$30,000.

335 acres, Stevens Co., Kans. No buildings. Good well on land. Would make good stock farm. 40 miles fr m R. R. \$3,300.

400 acres, Dawson Co., Mich. Fair buildings. Orchard. Land nearly all under fence. 5 miles to R. R. \$6,000.

40 acres, Muskegon Co., Mich. Good buildings. Orchard. 30 acres timber. Land borders on Lake Michigan. Fine summer resort. 5 miles to R. R. \$9,000.

34 acres, Jefferson Co., Colo. Good buildings. Orchard of 24 acres. 2 wells. 2½ miles to R. R. \$16,000.

10 acres of land, Littleton, Colo. Land under fence and has water right. 10 minutes' walk to two R. R. \$3,000.

46 acres, Shenandoah Co., Va. Good buildings. Orchard. House contains 9 rooms. Fine location. ½ mile to R. R. \$1,000.

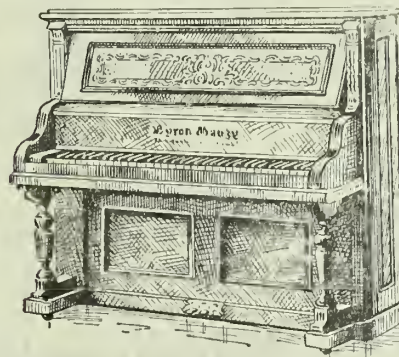
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10 acres, Placer Co., Cal. Poor buildings. Orchard. Some timber. Land all fenced. 1½ miles to R. R. \$1,050.

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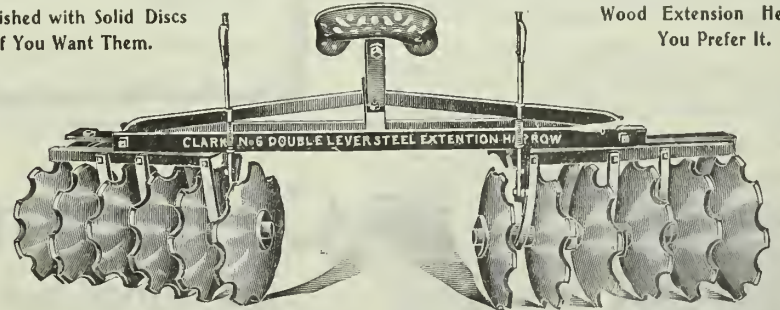
Single Blacklegine (for common stock): No. 1 (10 doses) \$1.50; No. 2 (20 doses) \$2.50; No. 3 (50 doses) \$6.00. Double Blacklegine (for choice stock) \$2.00 for 10 doses, first lymph and second lymph inclusive. Blacklegine Outfit, for applying Blacklegine, 50 cents.

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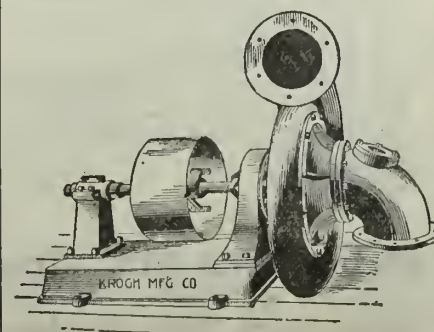
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## Another Frost Fighting Test.

The Bolton electric alarm thermometer, says an exchange, was put through a very rigid test on the Kearney estate, 8 miles west of Fresno, recently. The instrument was set up just a mile and a half from the Kearney residence and wired into the foreman's bedroom. In this connection 600 Froude oil pots were distributed over twenty acres of apricot orchard on which the trees were heavily laden with blossoms and tender buds. The thermometer was set to ring the bell when the temperature should fall to 34° in the orchard. The temperature reached the danger point at 4 A. M., at which time the electric bell began to ring. This aroused Mr. Cheressy, the foreman, and he proceeded, with his men, to the orchard, and in one hour had his 600 pots in full operation. He allowed the pots to burn until 7:30, and then had his men extinguish them by pushing the lid over each pot.

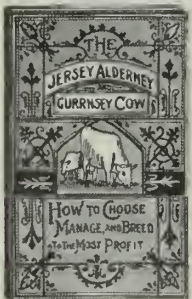
In speaking of the matter Mr. Cheressy states that within the area of twenty acres he not alone prevented frost formation, but had heat to spare; that is to say that he could have prevented the frost with a less number of pots. Outside the protected area in every direction there was a heavy white frost on the ground. With the exception of Mr. Moodey's operations on his lemon orchard, this was the most extensive test made with oil fire pots for smudging thus far in Fresno county, and proves that this method of smudging will protect the most tender plant from the ravages of frost.

Mr. Cheressy has reloaded his pots, each pot being securely covered to protect the fuel from rain and evaporation, and he believes that the protection thus afforded to one acre will more than pay for the entire plant on twenty acres. He proposes to keep the pots on the ground until the 15th of May, and perhaps longer. The circuit over which the electric thermometer operates is the longest at present in use anywhere, the total length of wire used being 3 miles.

**SIX HUNDRED-ACRE ORCHARD.**—Sutter County Farmer: The Marcuse orchard of about 200 acres, with a half-section of land adjoining the same near Marcuse Station, was sold Saturday by the Humboldt Savings & Loan Society to W. S. Hotchkiss & Co., who will immediately plant the vacant land to fruit trees, making an orchard of about 500 acres. Mr. Hotchkiss is the president of the Central California Canners' Association, which is independent of the Canners' Trust, and has canneries at Sacramento, Emeryville, Gridley and Sebastopol. The principal variety of fruit planted will be peaches and, probably, a portion of the land to pears.

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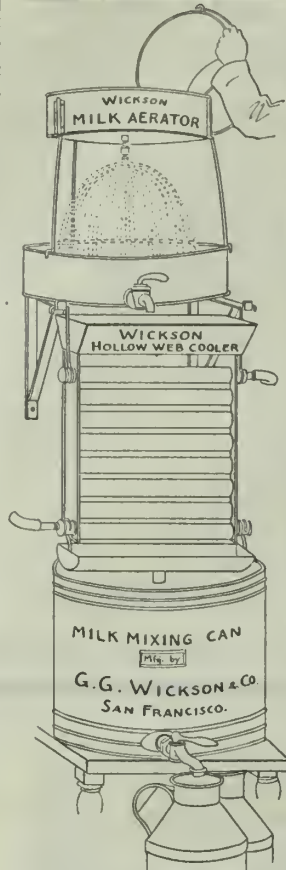
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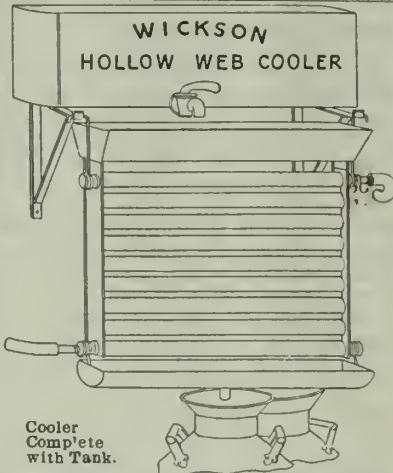
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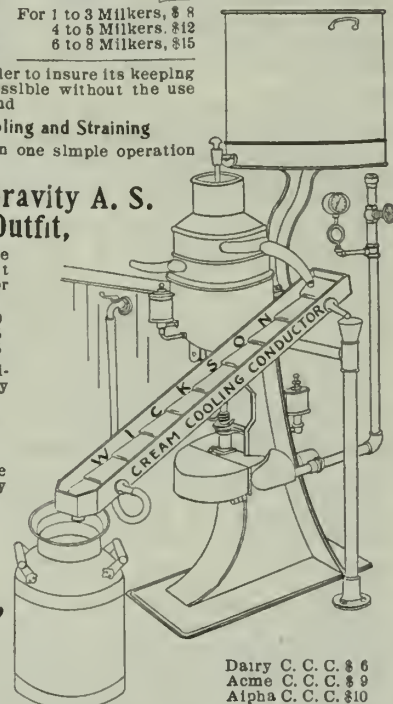
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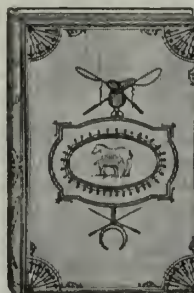


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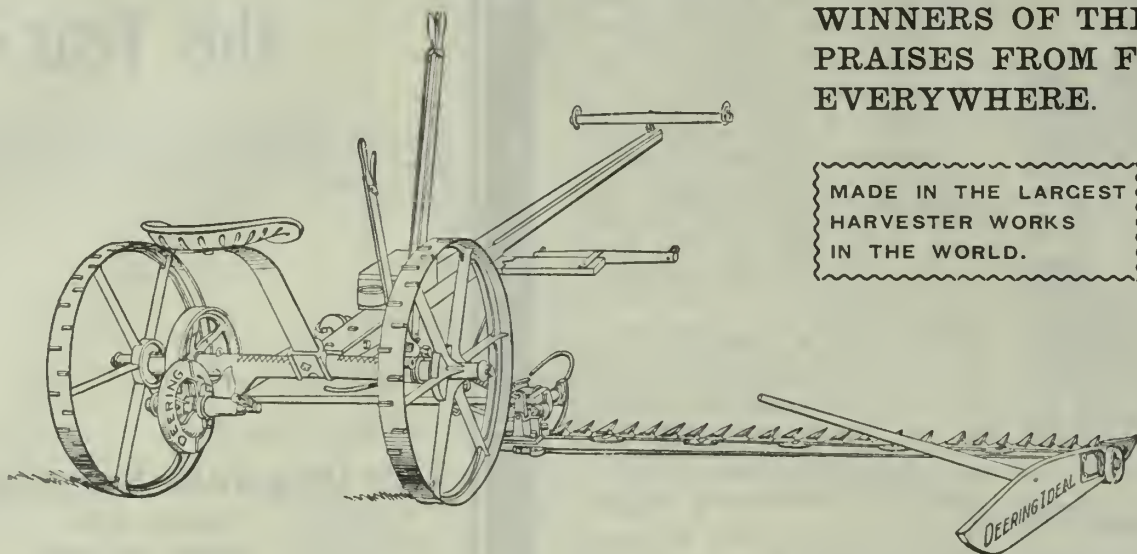
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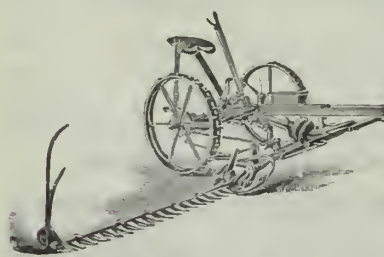
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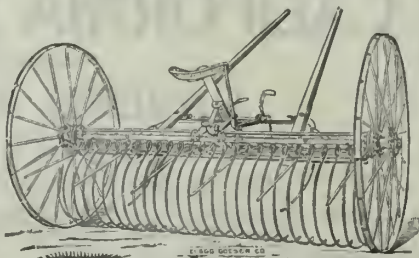
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AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 16.

SAN FRANCISCO, SATURDAY, APRIL 19, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

## On a Yolo County Fruit Farm.

The views on this page are interesting in themselves and they are also significant in many ways. They are from photographs taken on the farm of Mr. Byron Jackson, near Woodland, Yolo county. This property has been in process of development for a little more than twenty years. It has received the liberal attention of its owner, who is a prominent manufacturer of San Francisco, and the immediate management has been entrusted to the best executive skill he could secure for that purpose. For nearly a decade Mr. G. H. Hecke has been local manager. Thus a continued policy of liberal provision for improvement under able management has resulted in the development of a horticultural property which in its appointments and equipment is notable even in California, where such things are not rare. The area is a quarter section, and when it was bought by the Jacksons in 1880 was a part of a grain and stock ranch. Planting vines and fruit trees proceeded carefully and not upon the wholesale plan, which is too often undertaken with too little forethought. As one looks through the list of fruits now growing in commercial quantities on the ranch, as we find them laid down in a pamphlet just published by Mr. Jackson, one is impressed with the fact that the property has been well laid out and planted to meet profitable production. Not only so, but the progressive development of buildings for various purposes of fruit handling has been very fortunately planned and realized.

Our engravings show, too, features which seem to us especially significant. One is the irrigating plant. The orchard is proof against drouth injury. In the winter irrigation water is taken from a ditch leading out from Cache creek and flooding with water richly laden with sediment is found to be very valuable. In the summer as needed the capacious pump shown in the picture is used. It throws a stream of 1100 gallons a minute, and will irrigate from five to ten acres per day according to the distance the water has to follow the ditch, for in the deep light loam of the ranch the water does not stay in a ditch well. The soil is a sedimentary deposit than which it is



Farm Residence and Packing Buildings on the Jackson Orchard.

hard to find a superior in warmth and fertility, in freeness for root penetration and in capacity to act as a subterranean reservoir for the growth of trees and vines. Absence of hardpan and alkali make the free use of water safe and very profitable. By means of its pumping plant drawing upon the inexhaustible supply afforded by shallow wells, the orchard is independent in the matter of summer irrigation.

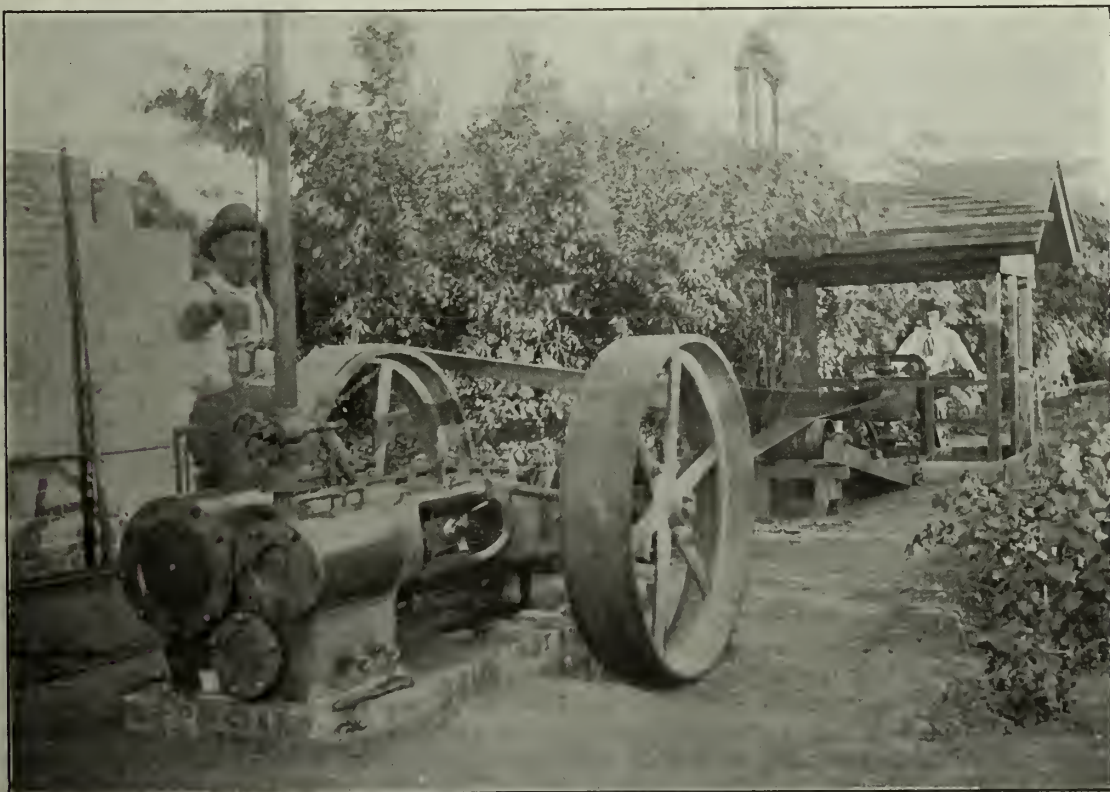
The other picture is significant in showing the main plant of buildings of the property. In the background the full range of buildings from the resi-

dence to the various structures in which steam power is used, is shown. The dwelling is commodious. One of the largest buildings is the raisin drying and packing house; another is the prune processing and packing house, which is furnished with modern machinery. Other buildings are for storage and stabling, for the lodging of employees, etc. The pamphlet by Mr. Hecke shows that over \$30,000 has been expended for buildings and equipments wholly aside from cost of land and trees, vines, etc., used for planting the place. He also gives balance sheets showing that the cost of running the ranch in 1899 and 1900 was nearly \$8000 less than the sales of products in the first year and nearly \$9000 less in the second year, and that these amounts represented the profits in those years.

It strikes us that the account of the property has a very business-like air and will be found very interesting to those who are looking up figures on enterprises of this kind.

THE German producers are working hard to protect themselves against fruit importations. It is telegraphed from Berlin that the tariff committee of the Reichstag last week fixed the duty on dried apples and pears at 10 marks, on dried plums of all sorts at 10 marks, if loose, and of 15 marks if packed. All other dried fruits were taxed 8 marks per double hundred weight. Fresh bananas will be free of duty, oranges, lemons, pomegranates, dates, figs and almonds will pay a duty of 12 marks, dried figs, currants, dates and raisins are taxed 24 marks, dried almonds, oranges and pomegranates will pay 30 marks and pineapples 4 marks.

STATE GEOLOGIST BLATHWAY says that Indiana, Illinois, Ohio and Kentucky will be infested with the seventeen-year-old locust this summer and that Indiana will have more locusts than all the other States put together. Only eastern Illinois will be affected, he says. The last appearance of the insects in Indiana was in 1885. They are expected to make their appearance about May 1st. Geologist Blathway advises that few fruit trees be planted this year.



Pumping Plant on the Byron Jackson Orchard Near Woodland.



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## The Week.

Haying has begun in the earlier regions of the State, and the thousands of Eastern people who are now looking through the State are in doubt as to whether they more enjoy the scent of fruit blossoms or of newly mown hay. The air is full of both these perfumes, and they blend well. The advance of summer signs gives the fruit growers confidence that they will escape injurious frosts this spring, and much satisfaction is expressed. We ran about several hundred miles in the San Joaquin last week and deeply enjoyed the cheery, contented feeling which was everywhere manifested. It looks as though it was going to be the greatest kind of a year. A few more showers are, however, needed in some places to round out the rainy season well.

San Francisco is getting to be quite a promoters' center. Several leading interior sections have spieles here who are bringing the particular advantages of their sections to the attention of the multitudes who are arriving in the metropolis from all directions. The display of the State Board of Trade in the Ferry building was never more widely and closely scrutinized, and all counties represented are getting a share of the attention. This sort of work ought to continue all summer. After the spring pilgrims have disappeared the midsummer throngs, who are to attend fraternal conclaves in this city, will begin to arrive, and the multitude is expected to surpass all earlier experience.

Chicago wheat futures have advanced 2½ cents per bushel and futures have followed the same course here. Spot wheat is unchanged and there is little offering. Three cargoes of wheat have gone out to Europe and a part of a cargo to Australia. Nearly 20,000 barrels of flour have cleared, chiefly to South America, as the China trade is at present well supplied. Ocean freights are dull and unchanged, no charters having been reported for two weeks past. Barley is easier; there is a good demand for feed, however, and exporters want export barley at feed prices. Oats are quiet and unchanged, though concessions are talked of by those who desire to close out. Corn and rye are steady and quiet. White beans, including Limas, are weak and dragging. Bran is held rather high, but goes slowly, and the outlook is for reduction. Hay is unchanged and talk of scant rain in the drier hay regions is being indulged in. There is considerable hay held here which it is desired to unload. Meat prices are all unchanged and the products are firm, especially pork. Butter is

lower and rather weak, though the situation is being helped by considerable Eastern shipment, both from this point and direct from the creameries. Eastern jobbers are buying here in plain wrappers. The Eastern supply seems scant, and the oleomargarine legislation is said to have advanced values. Cheese is unchanged. Eggs are about the same; buying for storage is still very active and buyers not very discriminating. Poultry is a little easier, though good stock sells well; old turkeys and small broilers are at the foot of the class. Potatoes are holding up well and are firm with a good demand. Onions are barely steady; Australians are still in and going at concessions. Fresh vegetables are in larger supplies and declining prices. Few berries are coming irregularly and not in good condition usually. Cold storage apples and others from Oregon are selling fairly. Oranges are firmer for good medium-sized Navels and lemons are looking up a little, though prices are unchanged, and limes are higher. There is moderate trade in dried fruits, which promises to clean up everything but old prunes. Nuts are scarce and high. Honey is easier. Wool is the same as before, but business is being done chiefly in the country.

It seems this week that the new oleomargarine law is not yet out of the woods, as the opposition has still another barrier before it. The bill has to receive from the House a concurrence in the Senate amendments and this it is hoped to prevent. As we go to press on Wednesday it appears as though the House would take up the concurrence in committee of the whole and thus advance the chances of speed. There seems to be much excitement at the East because butter has risen considerably since the Senate passed the bill and the oleomargarine people are making the most of this to scare the supporters of the measure which they wish to impede. The House showed so strong a favor of the measure that they are hardly likely to be overinfluenced by a temporary advance which is being made use of sensationally.

The necessity of the British Government in the face of unusual war expenditures has revived the corn laws, which will strike the people severely. The new duty on flour is 5d per cwt. The cable reports

## Growing Demand for Agricultural Education.

Evidence of the widest appreciation of the value and importance of agricultural education is found in the fact that during the last decade special commissions were appointed by several European governments, and a congressional inquiry was pursued in this country as well, to ascertain causes of agricultural depression. The reports of these investigators cited the need of legislative enactments for the amelioration of agricultural conditions, and these naturally differed in the countries, but all agreed that the prime need of the producing classes was education that would fit them to secure better products with the least cost of production. The conclusion reached by all investigation was that, though some legislation was desirable, it was education, rather than legislation, which would relieve agricultural depression.

Agricultural education is now more popular than ever before. This is seen in the increased attendance of students at agricultural schools and colleges and in the liberal appropriations being made by State Legislatures for new buildings, better equipment and extension of agricultural curricula. The statistics of these institutions, as collected by the United States Department of Agriculture, show that the number of students taking agricultural courses in all the institutions has increased about 33% during the last decade, while in some States, as in California, the number has increased several hundred per cent.

The attitude of the public mind with reference to the practical value of research and experimentation in agricultural lines has notably changed. Associations of agricultural and horticultural producers throughout the country now advocate liberal promotion of scientific investigation and of instruction based upon the results thereof. Individual producers are choosing materials and shaping policies in accordance with these results, and are attaining more sat-

isfactory returns for their labor and investment. Popular understanding of principles underlying agricultural practice has been wonderfully advanced and has led to hardly less wonderful improvement of practice itself. It is no exaggeration to say that every line of farm work has been modified and advanced by the various agencies for agricultural education during the last two decades. Better fruits, better grains, better animals and better products from all of them, have made it possible to increase the volume of them all immensely because of their enhanced commercial suitability. One of the most striking demonstrations of the value of applied science in the advancement of nations and the enhancement of prosperity among individual producers is to be found in the agriculture of enlightened nations during the last quarter of a century.

This view of the value of special education in agricultural lines and the accomplishment which has proceeded from it are attributable to the fact that the conceptions, methods and materials of agricultural instruction are themselves wonderfully better than they were a generation ago. The relations of theory and practice are more clearly seen. Scientific investigator and practical operator have drawn closer together, and mutual recognitions of manhood and love of truth have been realized between them. Their interdependence has been not only admitted, but frankly declared by each. The result is confidence, interest and progress. The practical man of a generation ago was apt to laugh at his constituted instructor as more ignorant than himself, and he had too frequent reason for doing so. To-day ignorance and charlatany in agricultural education are the exception, and are so soon and so widely recognized as to be practically harmless.

Not only are agricultural investigators and teachers vastly better than formerly, but their works are available for general enlightenment to an extent which could hardly have been dreamed of a decade ago. The agricultural experiment stations of the United States published in 1899 455 annual reports and bulletins, aggregating 16,954 pages of the most carefully prepared information on agricultural subjects. These publications were regularly mailed to 523,970 readers. The publications of the United States Department of Agriculture, which has recently become the greatest single agency for the ascertainment and dissemination of agricultural knowledge in the world, are not included in the foregoing. This Department alone published in 1900 488 separate publications, aggregating 7,152,428 copies, an increase of nearly 300% since 1893. It is a notable fact that while these huge masses of high-class agricultural information are being cast abroad throughout the country, the publication of agricultural periodicals and books by private enterprise has also advanced. They, too, are better, truer and more liberally patronized than ever before.

The structure of agricultural education began building at the top. For a time its somewhat gauzy roofing seemed suspended in mid-air. More recently strong supports have risen from below and the structure is now secure and rock-founded. There is still, however, need that the lower stories should be more fully furnished and occupied. In spite of all that has been done in mutually connecting science and practice by regular instruction and by short courses in our agricultural colleges, and by Farmers' Institutes and other means of University extension, and by free publications for readers, there still remains a most important enlargement of the University effort, and that will be realized by the organization and maintenance of schools of practice in all branches of agriculture, so that those unfitted for or not desiring the higher courses of agricultural instruction and research may learn during limited periods of precept and demonstration the practical operations which will fit them for actual work according to most successful methods. The University should be supplied with such facilities for bringing such most important technical education within the reach of all who desire it. Pupils should go to these practice schools with such preparation as they can get in the common schools. The general benefit which such lower agricultural schools will confer upon the elevation of the industry, the prosperity of the individual and the advancement of citizenship, is beyond calculation.



QUERIES AND REPLIES.

The Codlin Moth---Traps or Spray?

To THE EDITOR:—I have read what you have said against the traps to catch the codlin moth and supposed that would settle the matter, but now I see a detailed account telegraphed from somewhere at the north that a man up there has invented the same kind of a trap and wants to have people know it. Does his trap catch moths or fruit growers? Is it any use to expect help from traps or must we spray? If the latter, what is now considered the best way to spray for the codlin moth?—READER, Lake county.

In spite of all that has been said about the worthlessness of the moth traps which use an oil lamp in a pan of water as a means of reducing the codlin moth, the fame of these devices still spreads. Telegraph operators are sending the fairy tales far and wide, and vendors of these traps are still trying to get their testimonials into print as news items. It seems to be a widely spread effort at mulcting the people. The Rural New Yorker puts the situation very pointedly: Farmers are told that these traps will take the place of spraying outfits, and that orchards can be kept free from injurious insects without the use of poisons. Of course, this argument is an attractive one, and we can well understand that a good talker may be able to convince some farmers that the scientific men do not know their business when they advocate spraying. Sometimes, when the trap is set at night, morning finds the dish well filled with insects. "I told you so," says the moth trap man, "here they are, dead!" It makes little difference to him that probably 90% of the insects are helpful rather than injurious—friends rather than foes—yet it makes all the difference to the fruit grower. We do not recommend the "moth trap" because the best entomologists declare that it does not catch the insects that do us most damage. Some of our worst insect foes do not fly at night, and hence would never go into the trap. It will without doubt catch many of the night flyers, but we have no confidence whatever in the statement that it will keep our orchards free from the codlin moth.

As for spraying with Paris green, we have recently had several good accounts of experience in that line and ask our correspondent to look back in his files for them. In addition we give a timely circular issued last month by the horticultural commissioners of Sutter county. The materials are: Paris green, 1 pound; lime, 5 pounds; water, 200 gallons. Slack the lime in about 5 gallons of water and after it has settled draw off the water and use with the Paris green. Make the Paris green into a paste before adding to the water.

The first spraying should be done just after the blossoms have fallen. The second spraying should be done about two weeks later; the third spraying three weeks after the second. For late varieties a fourth spraying is necessary and should be done three weeks later.

Keep the mixture thoroughly stirred while spraying, as the Paris green is not dissolved and must be kept in suspension by agitation. The spray should be fine and should be applied thoroughly over the entire tree.

Where the fruit is attacked by "apple scab" or "pear cracking" the Paris green can be used with summer strength of the Bordeaux mixture as given in last week's PACIFIC RURAL PRESS.

When purchasing Paris green demand a written guarantee of its purity of your dealer, and send a small sample of the poison to Prof. E. W. Hilgard, Agricultural Department of the State University, Berkeley, Cal. The sample will be promptly analyzed without expense and a report made to you. Unless the Paris green used is of proper quality no beneficial results will follow and time and money will be lost.

Gumming Apricots.

To THE EDITOR:—I have an orchard of Royal apricot trees five years old. For the past two years they have had considerable gum bursting through the bark. I noticed that some of them, when out in leaf, did so, and it killed a few of the branches. This year they are not so bad. What is the reason? What must I do to cure it? Is there any danger of the borer getting into the cracks in the bark? Do you consider apricots budded on peach root the best?—READER, Madera, Cal.

Gumming is usually a sign of root trouble, though not always so. If the gum appears in a few large

masses it is less serious as a symptom than if the gum seems to be everywhere in small amounts. The former appearance can be treated by removing the diseased bark and painting the wound. Where gumming is abundant along twigs and branches it may sometimes be caused by sunburn, and that you can test by noting whether the appearance is on bark exposed to the sun. The best treatment for that is a coat of whitewash. If the gumming is not in the sun, and is widely seen on the branches, it is due to lack of water or to too much water, for both extremes cause the loss of root hairs, with which the roots secure support from the soil. The treatment in this case is either irrigation or drainage, according as the tree has too little or too much water in the soil. Gumming branches should be generally cut back to healthy wood.

There is more danger of borers in sickly wood from whatever cause. They do not need to get into the cracks; they freely penetrate injured bark anywhere. Apricots on peach root are best if the soil suits the peach; on soils too heavy for the peach the apricot will do on the myrobolan, but not usually so well as on its own root or on the peach.

Bordeaux on Peaches and Apricots.

To THE EDITOR:—My peaches are in bloom and apricots have set. Is it safe now to spray with Bordeaux mixture for curled leaf and shothole fungus?—H. H. CARLTON, Napa.

The apricots are safe, and if the peaches are going out of bloom, as we imagine they are, they can be sprayed also. It is not necessary to wait until the peach bloom works itself off its furry foundation. We do not like to use a fungicide on an opening bloom, but one does not have to wait long for the bloom to have passed the doubtful state. You will find an article on another page about treatment of shothole fungus.

Excess of Fibrous Roots.

To THE EDITOR:—I send samples of apple tree roots. Please tell me what the trouble is, and whether it is likely to damage or retard the growth of the tree? Is it advisable to plant such trees? As they were shipped from another county, I can tell nothing about the conditions under which they were grown.—READER, Merced county.

We have examined carefully the root of apple tree which you send and do not find any disease upon it. It looks much as though the trees had been reset, and the unusual growth of fibrous roots is the result of that operation by which nurserymen sometimes check the growth of trees which they desire to hold over. We cannot, of course, say that that was the actual fact, but the growth has that appearance. It will be possible to get a good growth of such trees if, in planting, you are careful to spread out the fibrous roots as much as possible and get the soil well distributed between them. It would be a great mistake to plant carelessly and allow these fibrous roots to mat down in bunches, and thus prevent direct contact of the earth, which is necessary to successful growth.

Cutting Back Peach Trees.

To THE EDITOR:—When I pruned peach trees last winter I did not cut back the tops. I left them so that in case of frost killing those nearest the ground some might still be left in the tops of the trees. Our danger from frost is nearly past and the trees are heavily burdened with fruit. I think of doing a large proportion of my thinning by top pruning the trees. Before doing so I desire to have your judgment as to whether cutting them back at this time will in any way injure the trees.—C. C. ROYCE, Chico.

This is about the best time of the year to cut back peach trees so far as healing of the wound goes. We have never seen any injury to the crop on the lower limbs by topping at this time of the year, and we have done a good deal of it. We should not hesitate to do what you propose, cutting back to a lateral to reduce as much as possible the break of shoots at the top. It is a mistake to top off trees as one might top a hedge at a certain height, but cutting each branch with due reference to its lower branching. This shortening in will not take the place of thinning if the fruit is too thickly set on the remaining portion, but it will do good as far as it goes.

Forage Plants for Overflowed Lands.

To THE EDITOR:—Will the so-called Hungarian grass (*Bromus inermis*) stand submergence in cold water for perhaps a period of three to four weeks? The land on which I wish to plant is sandy adobe—that is, surface sandy and lower rather adobe. The overflow of water is in winter, and the water is cold,

with slow currents. Could you recommend a grass suitable for such land—good for pasture and hay—better than the above?—READER, Colusa.

We have no evidence as to the behavior of Hungarian Brome grass when submerged. Nothing but experiment on your part would determine that fact, unless some other reader can give his experience. You would be quite safe in using Australian rye grass, which is admirably adapted for low lands and will endure a long period of submergence. Eastern red clover will also endure overflow, and, sown with the rye grass, will constitute the best combination that we can suggest for such a situation.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending April 14, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Warm weather prevailed during the week and no rain has fallen. Grain, alfalfa and hay are making rapid growth, and the outlook for heavy crops has never been better. The rain at close of last week was beneficial to all crops, and enabled farmers to resume plowing on the dry lands. Work in orchards, vineyards and hop fields is progressing. Almonds are dropping in some localities, but an average crop is expected. Apricots in Yolo county are doing better than expected, and will probably yield a fair crop. Other deciduous fruits continue in good condition, and give promise of a heavy yield. Citrus fruits are thrifty. Olives are in bloom in some places.

COAST AND BAY SECTIONS.

Conditions have been favorable for all crops during the week. The temperature has been slightly above normal, and no injurious frosts have occurred. Light rains fell in portions of the northern section at the beginning of the week, with high wind in some places. Grain and hay are making good growth, but would be benefited by rain in the southern districts. Prospects continue good for large crops of wheat, barley and oats. Early barley is heading out in Lake county. Hay cutting has commenced in San Luis Obispo county. Hops and sugar beets are doing well. Pasturage is plentiful, and stock are in good condition. There are a great many small apricots in the orchards of Santa Clara county, and it is expected these will drop, leaving enough of the good fruit to make an average crop. Other deciduous fruits are in good condition, and citrus fruits are doing well.

SAN JOAQUIN VALLEY.

Warm days and cool nights during the week have been favorable for growing crops. No rain has fallen since last Monday night, and there have been no injurious frosts. Grain has made rapid growth, and prospects continue good for a large yield. Oats and barley are heading out in many places. The first crop of alfalfa is ready for cutting. Green feed is plentiful. In the vicinity of Reedley there has been a large increase in the acreage in vineyards and orchards, and a corresponding decrease in grain acreage. There is abundance of water for irrigation, and orchardists expect unusually heavy crops of nearly all varieties of deciduous fruits. Citrus fruits and vineyards are in good condition.

SOUTHERN CALIFORNIA.

The temperature was below normal during the first of the week, but warmer weather prevailed at the close. Rain at the close of the preceding week was very beneficial to all crops. Grain and hay are in good condition, and fair crops are expected. Green feed is plentiful. A large acreage of potatoes has been planted at Anaheim, and the crop is looking well. There will be a large increase in the sugar beet acreage in many places. The acreage devoted to beans in Ventura county is said to be much less than last season, sugar beets taking the place of beans. Deciduous and citrus fruits are in good condition. Owing to the unusual abundance of wild flowers in San Diego county the honey yield will probably be the heaviest for years.

LOS ANGELES SUMMARY.—Week warmer and more favorable for crop growth, though rain is beginning to be needed in places. Irrigation begun, and farm work settling down to summer basis.

EUREKA SUMMARY.—Rain for the past week greatly interfered with farm work. Crops are generally backward, but making good growth; warm, sunshiny weather much needed. Prospects are good for an abundance of fruit.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, April 16, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	.12	46.58	44.58	38.13	62	40
Red Bluff.....	.00	29.71	22.68	22.34	80	46
Sacramento.....	.00	16.28	17.50	21.58	76	44
San Francisco.....	.00	17.35	18.99	23.39	78	48
Fresno.....	.00	6.40	10.39	12.21	84	38
Independence.....	.00	4.23	5.81	5.30	76	36
San Luis Obispo.....	.10	21.18	27.87	16.60	86	46
Los Angeles.....	.00	10.44	14.18	16.53	80	42
San Diego.....	.00	5.85	10.66	7.87	68	50
Yuma.....	.00	.68	3.60	2.82	92	52



## HORTICULTURE.

### Grafting and Budding.

By MR. W. F. KOHLER, at the University Farmers' Institute at St. Helena.

Grafting is the insertion of a scion of one species or variety on the stem or branch of another, which is called the stock. Its principal object is the same as budding to certain varieties that can not be reproduced from seed with certainty; but it is frequently performed with other objects in view—for instance, to fruit a new variety.

A scion inserted in a branch of a bearing tree will bear fruit, perhaps, the second year from the graft; but if the same scion had been put on a young seedling it would not have borne so soon.

**STOCK AND SCION.**—We can graft, in many cases with highly beneficial results, the peach and apricot on the plum, the pear on the quince, strong-growing varieties on weaker ones, and vice versa; but experience has established the fact that there must be between stock and graft a close alliance. Many reports have been published of trees grafted upon species of widely different genera and orders of plants, but such reports are not founded in truth.

We can not graft an apple on a peach nor a cherry on a plum. The pear, apple, quince and ash—a naturally allied group—may with more or less success be worked upon one another.

The French horticulturists describe in their works upwards of 100 different modes of grafting; but, however interesting the study of all these may be to the student, the great bulk of them are of little practical utility and are never applied in the multiplication of fruit trees.

**POPULAR METHODS.**—The methods that I shall describe are those universally adopted by the best practical propagators everywhere at the present day. Stocks are of all ages, from a yearling seedling to a tree forty or fifty years old; but, of whatever age, they should be sound and healthy.

Scions are generally shoots of the previous year's growth. They should be cut in the winter and buried in dry sand until wanted for use. They should always be taken from healthy, vigorous trees and be of firm, well-ripened wood from the upper branches of a tree. A moderate-sized scion, if well matured and sound, is much better than one as thick as a man's finger.

The implements used are the grafting knife, saw and chisel. Grafting composition is prepared in various ways. Rosin, beeswax and tallow in equal parts answer very well. The grafting wax I use is made in the proportion of 2 pounds resin, 1½ pound beeswax and ¼ pound tallow.

**WHIP-GRAFTING THE ROOT.**—I will not describe this method of grafting, as it is exactly the same as done in this vicinity in bench work, and was well written up by Mr. B. Bruck in his article in the PACIFIC RURAL PRESS, March 1, 1902.

In all large nurseries the roots of seedling trees are cut into 4-inch lengths and whip-grafted. It stands to reason that such trees are not as good as those worked upon seedlings. Most of the orchardists of this State would not plant other than budded trees on this account.

[There is some conflict of belief and experience on this point.—Ed.]

Whip-grafting on small trees standing in the open ground is performed in precisely the same manner, the sloping cut and tongue, corresponding in stock and graft, fitting into each other with precision, and the inner bark of both, at least on one side, placed in close contact.

**CLEFT GRAFTING.**—Cleft grafting is practiced on trees or branches too large for whip grafting—say from an inch in diameter upwards. In this case, the scion is cut in the form of a wedge. The part cut for insertion in the stock should be about 1½ or 2 inches long, with a bud at the shoulder, where it is to rest on the stock. The outer edge should be somewhat thicker than the inner. A sloping cut is then made on the stock, 1½ inches long; another cut is made across this cut, about half way down; the stock is split on one side of the pith by laying the chisel on the horizontal surface and striking lightly with the mallet; the split is kept open with the chisel until the scion is inserted, with the thick side out. Grafts of this kind heal much more rapidly than when cut at once horizontally.

Very large branches are sawed off horizontally at the point to be grafted; the surface is then pared smooth with the knife, a split is made with the chisel nearly in the center, and two wedge-like scions inserted; if both grow one can be cut away.

In large trees a limb is left to draw the sap and shade the young grafts; it can be taken out afterwards. A wooden wedge should be inserted in large branches to keep the scions from being crushed. Of course all shoots or suckers should be taken off. In old trees, where the bark is very thick, the beginner must be very careful to bring the interior bark of stock and scion in exact contact.

Another mode of grafting large branches is to cut

them off horizontally and pare them smooth with the knife; then cut the scion on one side about 1½ inches long, making a shoulder at the top; then raise the bark from the stock and insert the scion between the bark and the wood; apply the grafting wax all over the cut part.

The principal objection to this mode is that the grafts are apt to be blown off by the wind. The great points to observe always are: To have sharp instruments that will make smooth, clean cuts; to have placed in perfect contact the inner barks of scion and stock; to have the whole cut surface and every portion of the split perfectly covered with the grafting wax to exclude the air.

**BUDDING.**—This operation is performed during the growing season, and usually on young trees from one to five years old, with a smooth, soft bark.

Old trees can be budded by cutting off the branches in the spring, and budding the shoots the following summer. Mr. Schonewald's orchard of French prunes was changed into Sugar prunes, in this manner, last summer.

It consists in separating a bud, with a portion of bark attached, from a shoot of one tree, and inserting it under the bark of another. When this bud begins to grow, all that part of the stock above it is cut away, the bud grows on, and eventually forms a tree of the same variety as that from which it was taken. Buds may be inserted in the spring, and make considerable growth the same season, but, as a general thing, this is not desirable in the propagation of fruit trees. The ordinary season in California is from the first of June to the first of October.

The following conditions are necessary:

First—The buds must be perfectly developed in the axils of the leaves on the young shoots intended to bud from. This is seldom the case until the shoot has temporarily ceased to lengthen, as indicated by the perfect formation of its terminal bud.

If buds are wanted before this condition naturally arrives, their maturity may be hastened very much by pinching the tips of the shoots. In ten or twelve days after the pinching of a very soft shoot, its buds are fit for working.

Second—The bark must raise freely from the stock to be budded. This only happens when the stocks are in a thrifty and growing state.

The only implement needed is a budding knife. Common grafting cloth and raffia are used for tying in the buds.

**CUTTING AND PREPARING THE BUDS.**—Young shoots, in the condition described, are cut below the lowest plump bud; an inch or two of the base of every shoot, where the buds are very close together, and quite small, should be left. The leaves are then stripped off, leaving half of each leaf stalk to handle the bud by.

When a considerable quantity is cut at once, they should be stripped of the leaves and wrapped in a damp cloth as soon as cut; and they may be preserved in good order for ten days by keeping them in a cool cellar closely enveloped in damp moss.

**BUDDING.**—Having the stocks, buds and budding knife in the condition described, the operation is performed in this way: A drawing cut is made parallel with the shoot, removing the bud and the bark to which it is attached half an inch above and three-quarters below it. This is the usual length, but it may, in many cases, be shorter.

The cut is made just deep enough to be below the bark. A small portion of the wood is always taken off with it, and if this adheres firmly it should be allowed to remain; the base of the bud must be carefully preserved, for if it comes out with the wood the bud is useless. The base of the bud, as it is termed, is in a small portion of wood in the hollow part of the inside of the bud.

A smooth place on the stock, clear of branches, is then chosen, where two incisions are made to the depth of the bark, one across the end of the other, so as to form a letter T; the bark on the edges of the perpendicular cut is raised with the blade of the knife—no budder uses the ivory, as it is only a waste of time—and the bud is inserted between them, the upper end of the bark attached to the bark cut square to fit to the horizontal cut on the stock; the string is then wound around tightly, commencing at the bottom and covering every part of the incision, leaving the bud itself and the leaf stock uncovered; the string is fastened above the horizontal cut, and the work is done. In about ten days after budding they should be examined, and such as have failed may be budded again if the stocks continue to grow.

The strings may be removed in about three weeks after the budding; and they should never be left on over the winter, as moisture lodges around them, to the detriment of the bud.

The success of the operation, as far as its execution is concerned, depends in a great measure on smooth cuts, an exact fit of the bud to the incision made for it, secure, close tying, and the quick performance of the whole.

The insertion of a bud should not, in any case, occupy more than a minute; ordinary practiced budders will bud from 600 to 1000 in ten hours. The chief difficulty experienced by beginners in budding is the proper removal of the bud. When it happens that the knife passes exactly between the bark and the wood the bud cannot fail to be good; but this rarely happens—more or less wood is attached, and

the removal of this is the nice point. Where the buds are flat the difficulty is less than when they have large, prominent shoulders, as the plum and pear have in many cases. When all the wood is taken out of these a cavity remains, which does not come in contact with the wood on which the bud is placed; and therefore, although the bark unites well, the bud will not grow. A little practice will enable the budder to overcome this and all other mechanical difficulties.

**BUDDING THE VINE.**—Before I close I will say a few words on the budding of the vine. The budding of the vine has been done in France for several seasons with good success. I did some budding last season for Messrs. Rennie, Schonewald and Gagetta, but on account of the lateness of the season—the bark did not peel well—the results were not satisfactory, although a great many grew. In France several methods were employed and I gave them all a trial, but had the best success on those taken off with half sapwood.

The difference in budding vines and trees is in the removal of the bud. In vines sapwood is taken off with the bud; in other respects the operation is the same.

It is my belief that budding will take the place of field grafting. Its advantages are:

First, a man can bud twice as many as he can graft and he needs no helper.

Second, the vine is not injured if the bud does not grow.

Third, the absence of roots from the scion, as no soil is necessary around the bud.

This spring I shall give all the methods a fair trial and will report my success or failure later.

### The Shothole Fungus.

This serious disease which spots fruit, notably apricots, makes holes in the leaves and injures the twigs as well, should be resolutely fought. Mr. W. T. Clark, who is conducting the University investigation of the peach moth in Placer county, gives the following timely advice in the Newcastle News: An investigation of the apricot trees in the county shows the presence of a considerable amount of the spot fungus which has at times caused considerable loss to the growers of this fruit. Its presence is indicated by the appearance of certain rather well defined red or reddish-brown spots on the young leaves. Later on these spots turn to a dark, almost black, color, and finally the portion affected falls out and a small puncture appears in the leaf. The spots may in certain extreme cases be found on the young fruit, and apricots so affected will be found on maturity to be unmarketable.

The cause of the trouble is a fungus growth, which is carried and disseminated by the spores produced by the parent fungus. Each spot in each leaf is the starting point for untold numbers of other spots, and when once this trouble has obtained a firm footing in an orchard the crop may be considered a loss. The fungus in its present condition may be largely controlled by the use, as a spray, of some standard fungicide applied immediately. Probably the most effective fungicide is the Bordeaux mixture, made up in the proportion of one pound copper sulphate (bluestone) and one pound of lime to ten or twelve gallons of water. The bluestone and lime should be dissolved separately. The most satisfactory way to dissolve the bluestone is to suspend it in a sack hung in the mouth of a barrel in such a position that the water just covers it. Do not place the bluestone on the bottom of the barrel, as it will not all dissolve when so placed.

The so-called I. X. L. mixture has been found in certain cases to be effective as a fungicide, and it may be found to have value in this matter. Its preparation is simple, which fact will commend it to some growers. It will be desirable to make two applications of this material at an interval of two or three weeks. Whatever spray is used, it should be applied immediately to obtain satisfactory results.

## THE VINEYARD.

### A Sulphur Story.

TO THE EDITOR:—I would like some information and advice from you in regard to sulphuring grape vines. I will give you my experience of two years ago, so you will the better understand what information and advice I need. I have about nine acres of mixed varieties of table grapes. Two years ago I sulphured them three times, the first time beginning on May 1, when some of the early clusters were in blossom, again about the first of June, and again about the last of the month. Following your advice, I got the best sulphur I could get and used in all nearly 900 pounds. I used cans with perforated bottoms the first two times and took considerable pains to part and brush the vines with the hand to scatter the sulphur well through the vines. The last time I used a bellows for the most of it. I left a strip of six rows in one place across the vineyard without sulphuring,



to see what the difference would be, but could see no difference between the grapes on the vines that were sulphured and the grapes on the vines that were not sulphured. The rows left unsulphured ran north and south, so the prevailing west wind would blow across them. The May rains of that year came just after the first sulphuring. During the last sulphuring the weather was very dry and it was impossible to catch nights and mornings wet enough to make the sulphur stick to the vines well, and the weather seemed unusually dry and warm the balance of the season and the grapes were unusually free from rot. There was some loss from that cause, but, as I said before, there was no difference between those sulphured and those not sulphured to indicate that the sulphur had had anything to do with it. The vines are fifteen to eighteen years old and have always been thrifty growers and many of them are quite large and spreading. The soil is dark and heavy and always more or less lumpy. The vineyard is near the old town of Wilmington and about 2 miles from the nearest point on the bay.

Now, would the rain, coming so soon after the first sulphuring, materially lessen the effect of that application, or would the dryness of the weather during the last sulphuring be likely to lessen the effect of that sulphuring? Do you think I used enough sulphur? Would the wind be likely to carry the fumes of the sulphur across the six unsulphured rows to such an extent as to make the effect apparently the same, or was the good quality of nearly all the grapes most likely caused by the favorable weather?

Last year the frost killed nearly all the grapes, so I didn't experiment with them. The weather was cool and damp all summer, and what few grapes there were nearly all rotted. W. E. PHILLIPS.

Long Beach, Los Angeles county.

Your experience is a demonstration of the efficacy of sulphuring, for you would have probably had few good grapes without it. The action of the sulphur is not by direct contact, but through the vaporization of it by sun heat. There is loss of sulphur sometimes by the effort to get it all through the vine. Throw it on the exposed foliage, especially the lower leaves which are reached by the sun, because the vapor rises from them to the higher leaves. Sulphur which falls on the hot earth surface is also vaporized and effective, but that which falls into the shadow of the vine may be unchanged. The vapor is disseminated and reaches the fungus on other vines than the one which gets the application. The rows of your vines which were unsulphured doubtless were benefited in this way. The early rain, by washing the sulphur from the foliage, may have much reduced its efficacy. The hot, dry weather you speak of should have added to the action of the sulphur. We would do the first sulphuring earlier. It is desirable in regions badly affected by mildew to throw a little sulphur on the stump just as the growth starts, and apply more to the leaves as they open. It is a good part of the game to get ahead of the mildew and keep ahead of it all summer.

## FRUIT MARKETING.

### Fruit Raising in Japan.

California fruit growers who have their eyes upon Asiatic markets will be interested in a statement by Consul E. C. Bellows of Yokohama to the State Department, as follows: Fruit growing has not hitherto been an important industry in Japan, and, when attempted, it has been a side occupation of the farmer or gardener, there being few farms in which fruit forms the staple crop. Fruits originally cultivated, and probably native in Japan, include the orange, pear, peach, sour plum, almond, grape, persimmon, loquat, pomegranate, ginkgo, or salisburia, and fig.

**CITRUS FRUITS.**—The suykan, or Japanese sweet orange, is smaller, sweeter and less juicy than the oranges raised in America, and the thin membrane separating the sections of the fruit is tougher; it has a very pleasant flavor, and is much used for food by both natives and foreigners. It is cultivated all through the warmer regions of Japan and is the most plentiful of the fruits raised here, being found in the markets from early autumn until late the following spring. The country also produces an orange larger and more acid than the California product and somewhat bitter. It is not much valued and is produced in small quantities only.

**DECIDUOUS FRUITS.**—The persimmon comes next to the orange in the number produced and is a favorite with the natives, but its season is comparatively short. It closely resembles the persimmon of our Southern States. The sour plum is extensively cultivated and yields a good crop; but the other fruits named above, though more or less widely grown, are

produced in much smaller quantities—the fig being most abundant and most valued of the less important fruits. The Government has introduced peaches, pears and grapes from Europe and America, and has found the soil and climate well adapted to their production, so that these are now cultivated in addition to the native varieties of the same fruits.

Of the fruits wholly unknown in Japan until introduced from abroad, the apple has proved most successful, and it has become a chief product of some districts in the Hokkaido, or northern islands. The apples are of fine appearance and excellent flavor, and the trees yield a profit very encouraging to the cultivator, so that the area of their production is being increased. Cherries also have been introduced, but the fruit is inferior. However, the greater skill in cultivation which will come from longer experience may yet produce very satisfactory results. The native cherry tree produces a profusion of beautiful flowers, but no fruit, and the Japanese gardeners have cultivated it solely with reference to these, having developed a variety with clusters of large double blossoms. Strawberries and other small fruits are raised by gardeners in the vicinity of the large cities and the plants bear fruit of fine appearance, but little flavor.

The natives eat fruit chiefly fresh, and its use as a table diet is not general, although increasing. The processes of drying and canning fruit are beginning to come into use, but only as a means of preserving the fruit for home consumption, not for export.

**PRESERVED FRUITS.**—Dried raisins, apricots, figs and prunes are imported in small quantities, but dealers here say that they sell these goods only to foreign residents and to ships laying in supplies for a voyage. During the moist, hot summer, flour, meal, dried fruit and all similar merchandise quickly becomes infested with maggots unless securely protected, and it is therefore necessary that the fruit should be put up in bottles, tin cases or closely sealed boxes before it is shipped to this country. In view of the growing appreciation of the native for fruit as an addition to his rather limited bill of fare, an enterprising agent might be able to find, or create, a market here for the fruit exports of the United States—a market which will, however, be limited by the poverty of the working classes; for when \$6 or \$8 a month buys food, fuel and clothing for a family of four or five persons, dried fruit at 12 cents a pound must needs be a rare luxury.

## THE DAIRY.

### Milk Production Under Hygienic Conditions.

By ARCHIBALD R. WARD, Instructor in Veterinary Science and Bacteriology, University of California, at a Convention of Sanitarists in San Francisco, April 14.

The subject of the bacterial contamination of the milk supply in its relation to disease is one that well deserves attention by health departments. Milk occupies a unique position among human foods by reason of its popularity among all classes, its perishable nature, and also because it is consumed in a raw state. Economic conditions are such that it is handled by a poorly paid class of laborers, who are unlikely to observe desirable sanitary precautions with close supervision.

A person speaking upon the subject of milk bacteriology incurs great risk of leaving the impression upon the listener that he is a "faddist" and alarmist. Because knowledge of bacteriology has progressed mainly along pathological lines, the fact that most bacteria in milk are harmless to the healthy adult are not well understood. There is a popular impression that it is a serious thing to "swallow a microbe," and that all milk containing bacteria is bad. Nothing could be farther from the truth. Objection to the use of milk as a food for adults on the ground that it contains a few hundred thousand bacteria per cubic centimeter is based upon a repugnance to such food, rather than conclusive evidence of its ability to produce disease.

In the case of milk for infant feeding, authorities are agreed that excessive pollution by bacteria is positively harmful. Clinical experience has shown that during hot weather, especially, milk teeming with bacteria and their products is a serious menace to the health of milk-fed infants. Statistics show that diseases of the digestive tract account for a large percentage of deaths among infants. All this is explained upon the ground that in the case of the infant the milk passes through the stomach so rapidly that gastric digestion can not be depended upon as a barrier against bacterial infection.

In view of these considerations, it may be pardonable if I inflict upon you a brief resume of the facts concerning the sources of contamination and indicate the practical methods of minimizing such pollution.

**HOW MILK BECOMES CONTAMINATED.**—That the first milk drawn from each of the cow's teats contains micrococci, which are normal invaders of the lactiferous ducts, is a matter recently demonstrated.

It has been shown that cows with large, easy-milking teats give milk containing more of these organisms than cows with teats provided with tight sphincter muscles at the extremity of the teat. In at least one dairy in the East the cows are selected with regard to this matter. Rejection of the first few streams of milk is practiced in some dairies to reduce the bacterial contents of the milk, for the first milk drawn contains a large number of bacteria derived from the interior of the teat.

There is little need of calling attention to the unnecessary contamination resulting from lack of care in scalding milk tinware and strainers. The subject may be dismissed with the comment that such simple precautions, if neglected, lead to serious contamination.

The shower of manure particles, hair, etc., that usually fall into the milking pail during milking can be prevented by grooming the cow some time before milking and by dampening the udder with a cloth immediately before milking. Milking pails, specially constructed with reference to exposing as little surface for the reception of dust as possible, aid in minimizing the contamination by fecal bacteria at milking.

The dust ordinarily present in cow stables can in many cases be avoided by intelligent attention to details. In some dairies the cows are milked in a one-story structure constructed with special reference to avoiding the presence of dust in the air.

It is desirable that milk be strained, cooled and bottled with reasonable celerity. Once in a bottle and kept cool, milk is protected from further pollution. For this reason it is unnecessary to call attention to the desirability, from a hygienic point of view, of having milk marketed in bottles.

**DISEASE GERMS IN MILK.**—The possibility of the transmission of cattle diseases to man is a subject of popular discussion at the present time. Dr. Robert Koch, in his well-known paper read at the London Tuberculosis Congress, did not intend to disparage the efforts of health departments to prevent the marketing of milk from tuberculosis cows. His statements have been welcomed and made the most of by the opponents of the anti-tuberculosis crusade. The final settlement of the question of the transmissibility of bovine tuberculosis to man will have little effect upon the milk supply problem. The public will object to consuming milk from tuberculous cows upon the ground of the natural repugnance of civilized man to a food derived from a diseased animal, even if it is not strictly infectious. This same point of view governs the inspection of meats by the Federal inspectors at abattoirs. Carcasses showing lesions of hog cholera are condemned as unfit for human food, for the all-sufficient reason that food products from diseased animals are unwholesome, rather than upon the ground of the susceptibility of man to this disease, which, of course, does not exist.

Inflammatory diseases of the cow's udder, with which are associated streptococci, are considered a menace to the health of infants. Inasmuch as streptococci are found in certain disorders of the digestive tract in infants, the rejection of milk of cows suffering from mammitis becomes imperative.

Numerous typhoid epidemics have been traced to the pollution of milk by water containing the typhoid organism. Slovenly dairymen have been known to rinse milk vessels in well water, or even worse, without scalding. The practice of intentional adulteration of milk by water—too common in San Francisco—need but be mentioned in this connection.

Diphtheria and scarlet fever are diseases very commonly spread by milk from man to man. There is a large number of cases on record in which diphtheria epidemics have been traced back to a person milking cows.

**THE TREATMENT OF GERMS IN MILK.**—More or less successful efforts have been made to devise means for removing bacteria from milk or for killing them. Running milk through a clarifier, i. e., a centrifugal separator run at a speed swift enough to throw out considerable numbers of bacteria, pus cells and larger masses of filth, is useful but incomplete. The process can not be relied on to remove bacteria with any degree of thoroughness. Filters of sand, felt or cotton are subject to the same criticism.

The use of chemical preservatives, chief among which is formalin, can not be tolerated in a food for infants.

Pasteurizing, i. e., heating milk to a temperature fatal to all but spore-bearing bacteria without imparting a cooked taste, is highly desirable. Milk so treated is free from the danger of communicating the infectious diseases already enumerated and has the additional advantage of keeping sweet longer. There is objection to feeding infants on pasteurized milk which was originally contaminated with bacteria and their products. It is said with truth that such milk contains the dead bodies of the bacteria, together with their products, both of which have been found injurious to infants. There is considerable divergence of opinion among the medical profession concerning the comparative digestibility of raw and pasteurized milk. Sterilized or boiled milk is so profoundly altered in its constitution and nutritive properties that it can not be fairly compared with raw milk.

It is generally conceded that the proper natural food for infants is milk as free from bacteria as pos-



sible, and that measures designed to exclude bacteria must be relied upon to accomplish this result.

Dairies conducted with a view to excluding bacteria from milk are not easily put into successful operation, chiefly because of the competition in the milk business. Few men possess the technical knowledge necessary to direct such a business, and even if such an undertaking were inaugurated under private control, it would not succeed in the face of competition. We need in California a limited amount of milk, produced under irreproachable conditions, to be sold at a price commensurate with the care bestowed upon its production.

**CERTIFIED DAIRIES.**—In several of the larger cities of the East dairies are in operation under the direction of an expert commission responsible to some body of men enjoying the confidence and respect of the community. For instance, the Philadelphia Pediatric Society undertakes to furnish a certificate of approval to all dairymen complying with its requirements concerning the precautions essential to the production of good milk. The society appoints a commission, consisting of a bacteriologist, chemist and veterinarian, all men of recognized standing. These three specialists report to the society at regular intervals upon the condition of the dairies and the character of the product. The expense of inspection is borne by the dealer and indirectly by the consumer. Compliance with the requirements of the society necessitates a greater cost to the consumer, but the justice of the increased charge is not seriously questioned by those familiar with the conditions. The endorsement by the society has a distinct commercial value to the dealers and is highly prized. Similar commissions are improving the milk supply of New York and Boston.

The model dairy, endorsed by an authoritative society, has several commendable features that warrant its introduction in any large city. Physicians are enabled to recommend to their patients a milk produced under the most favorable conditions for insuring a healthful product. To the specialist in infantile diseases such an opportunity is of great importance. But the greatest value of the model dairy lies in its power of quietly educating the consumers and milk dealers. The writer believes that the scheme offers a peaceful means for accomplishing desirable reforms. The amelioration of our city milk supplies can be best accomplished by encouraging the establishment of a few model dairies as object lessons for the other dealers and the public. As soon as the public learns to appreciate good milk, it will be willing to pay for it, and dealers will be ready to supply the demand.

## THE POULTRY YARD.

### A Story of the Leghorns.

By ELIAS GALLUP of Hanford, at Tulare Farmers' Institute.

Forty-seven years ago, as I remember, there were imported to Mystic, Conn., by Capt. Gates, from Italy, some Leghorn fowls. My father was a mechanic and owned a small farm in the town of Ledyard, 8 miles from Mystic. He did not own and raise stock, consequently when not in school I found employment for myself on a farm at Mystic, where fine stock was kept. Capt. Stark owned some of these Leghorns. I spent my leisure time with breeders of fine poultry, and much of it at Capt. Stark's. When I returned home in the fall to go to school, Capt. Stark gave me some of these Leghorns. My father admired fancy fowls and assisted me in making warm quarters for these birds, as they had very large combs and had to be protected from the extreme cold weather. In color they were dominiques, or, as we called them, hawk color.

**LATER LEGHORNS.**—If I remember rightly there were imported afterwards some Leghorns that were red, and were called Red Leghorns. The first importation were great layers of very large white eggs, consequently they became great favorites with the poultry raisers of that county. Poultry was sold in the market by the pound, consequently Leghorns were not in favor with some at that time. The Leghorns were good winter layers.

About twenty-seven years ago I paid a visit to my old home and saw in Mystic some of the descendants of the first importation of Leghorns to that place. The first as well as the second fowls imported were very showy and handsome. The sickles and primaries in the males were often white. Leghorns at the present time, figuratively speaking, cover the earth. Take the world over and Leghorns are better known than any other breed. You may go into the smallest village of America or Europe and the Leghorn will be found crowing as cheerfully, strutting as proudly and flying the fence as aggravatingly, and every one who raises them will tell you that these are some of the characteristics, and will say that they are the best layers on earth. There is no doubt that continual selection of this breed for egg production has been the means of placing it at the front in that respect. When a poultry raiser starts in to keep poultry for the eggs he buys Leghorns.

**ADVANTAGES OF THE LEGHORNS.**—Some people are

always saying what they hear other people say. You will often hear some one say, when speaking of the standard breeds, that the standard bred Leghorn is not practicable for farm poultry. The Leghorns are simply the best farm fowls, and there are fortunately enough varieties to please any taste and satisfy any one's fancy.

You can raise two Leghorns just as cheaply as you can one of the larger breeds, and they grow up and are ready for business much sooner. Another mistaken idea is that Leghorns are more delicate than common barnyard fowls. It may be true that in some instances a greater number of them fail to reach maturity, but it is because they are treated more artificially. It is safe to say that thousands of fine chickens every year fall victims to mistaken kindness.

**STANDARD BRED FOWLS.**—Breeders of standard bred fowls who have been successful in breeding to standard are people possessed of much practical common sense who are equally capable of breeding to a high standard of utility. They are breeders who have had their favorite variety at heart.

There is an increasing demand for standard Leghorns, and I believe it behooves all breeders to breed strictly the type of breed therein described. Breed the Leghorn to the standard and judge them by the standard, and you have not only the most practical, but one of the most beautiful fowls on the face of the earth. I do not believe that any of the so-called practical qualities of a bird need be injured by breeding to the required standard color of plumage, eye, leg, beak, skin nor to any desired point of beauty. On the contrary, I believe that, in mating to produce points of beauty, we shall at the same time improve the practical qualities. In solid-colored fowls color does not worry one to any great degree, especially in breeding white birds. It is mostly to color of shanks, shape, size of comb, shape of body, etc., that we must look in parti-colored fowls; this is only half the worry of the breeding. The wedge-shaped hen is the one most desired by poultrymen, and to be able to determine just what that shape is when looking over the flock requires no little judgment. It is much easier to pick out the hen of desirable shape than to describe her.

A hen with a long, deep body carrying the tail well up, presenting a wedge-shaped appearance when viewed from the back or front, will usually be found a good layer. In the Leghorns we find more hens of the perfect egg shape than perhaps in any other breeds. The farmers of this county, however, should receive thousands of dollars for eggs and poultry where now they receive only hundreds. An objection often raised to increasing the poultry product on the farm is that it will add to the care and labor of the farmer's wife already overburdened with work.

**THE POULTRY BRANCH.**—If it pays at all it should be a recognized department of farm labor; and, while the house mother will naturally look after the little ones of the flock, the rest of the work, such as feeding, watering and keeping the houses in order, should be the work of some other person. The poultry business is not conducted merely for pastime, but is a legitimate branch of industry for profit, and for the greatest profit considering the investment of any single farm product.

**FOR THE YOUTH.**—It was a great pleasure to me in my boyhood days to own those beautiful Leghorns. Nothing could be more interesting to children than to own fine fowls. Then why not give the boys a chance? Let them commence with a few good ones. Give them the benefit of others' experience through a good poultry journal. Let them send their fowls to a poultry show where they can compare them with others. If the boys' birds are superior he will thoroughly enjoy the fact; if not, it will teach him to improve the flock until it is. It will afford an opportunity to impress the value of excellence in whatever is attempted, and it will also cultivate a love for country living that is to be desired. Perhaps no recollection returns to the busy man with so much of restful peace as the memory of the happy days spent in the old farm home, caring for his favorite fowls. The country home can and should be the ideal home of the American people.

### A Prosperous Petaluma Poultry Place.

The story of a successful career in California chicken ranching is told by the Tree and Vine:

Eleven years ago W. B. Purvine commenced raising chickens on a large scale. He has recently retired on a competency, having cleared on an average about \$5000 a year for the years that he was in the business. Mr. Purvine had 313 acres of land in Two Rock valley, near Petaluma. Besides his chickens, he had forty cows, but they were an incident. It was from the chickens that he made his money. His method of hatching and rearing chickens to keep up his great flock is interesting.

**INCUBATORS AND BROODERS.**—Mr. Purvine had his incubators so arranged that he could set from 1100 to 1200 eggs at a time. He hatched from these from 700 to 900 chickens. The entire hatch was then

placed in one immense brooder, which was a small house, being 24 feet long and 12 feet wide. In the center of this brooder house an alley 2½ feet wide extended 20 feet of its length. This left a space on each side a little under 5 feet wide, which were connected at the farther end by the 4 feet of the 24 feet of the building after allowing for the 20-foot alley. A chicken could thus run around three sides of the building. On one of the long sides of the building the hovers were situated. On this side a box 14x12 inches was built the whole length of the building. In this box a terra cotta pipe was placed, and covered with sand to the depth of 3 or 4 inches. At one end of the building was placed a stove, which was connected with the pipe. The warm smoke from the stove was thus carried the whole length of the building, escaping through the farther end. Sand was filled in, making the whole side level with the top of the box. When completed, the house furnished the chickens with a hover 24 feet long, less the space occupied by the stove. The chickens could run around the end of the building to the other side, where they had a run 24 feet long and nearly 5 feet wide. The attendant could stand in the 2½-foot walk in the center of the building and have all the 800 or 900 chickens within easy reach.

When the chickens were three days old they were allowed the run of a small yard. After they were a week or ten days old they were given the run of the entire place. The chickens were kept in their brooder houses until they were nine or ten weeks old. When they were six or seven weeks old roosts were put up in the brooder houses for them, and they learned to roost there. When they were nine or ten weeks old they were removed to the colonies situated in the various parts of the basin. To carry on his immense business, Mr. Purvine had six such brooder houses as described in operation during the entire brooding season.

**FEEDING AND CARE.**—The method of feeding followed by Mr. Purvine was simple. The first two or three days the chicks were fed the infertile eggs from the incubator. These were boiled and chopped fine. After that the chicks were fed corn bread, which was cornmeal mixed with milk and baked. They were fed this until three or four weeks old and feathered out, after which they were fed the same food as that given the older fowls. In this way Mr. Purvine hatched and raised thousands of chickens each year. He lost a very small percentage of the chicks hatched, and made one of the most notable successes of the chicken business recorded. His chickens in his giant brooder were never too hot and never too cold, were not afflicted with bowel trouble, and suffered but little from vermin. Other than being thoroughly cleaned after the broods had been taken to the range and whitewashed inside and outside twice a year, little attention was given the cleaning of the brooder houses.

Mr. Purvine did not deal in fancy stock as such, depending on the sale of eggs to the markets for his income. Incidentally, however, he sold many broilers. His money was made by applying sound common sense to the rearing and caring of chickens, demanding no fancy prices for eggs or stock, but being satisfied to supply the tables of thousands with eggs, rather than the pens of fanciers with thoroughbreds. After experimenting with all kinds of breeds, Mr. Purvine concluded that White Leghorns were the best all-round utility fowls; and, with few exceptions, after the first few years, his entire flock was made up of this breed.

### A Prosperous Association.

The annual meeting of the Deciduous Fruit Association was held on April 14, 1902, at Anaheim, and the following directors elected: J. B. Neff, J. B. Rea, John A. Eymann, Geo. A. Hunter and L. W. Kirby. J. B. Neff was elected president, J. B. Rea vice-president and John A. Eymann secretary. This makes the fifth term that J. B. Neff has held the office of president.

The California Fruit and Produce Exchange marked the walnuts of this Association, and as the expense of selling was smaller than was expected the surplus was returned to the Association. A check for each member's share of this surplus was handed to him at the meeting. The attendance was large. More than 75% of the members were present and all who spoke expressed themselves as well pleased.

THERE is an essential distinction between what are known as "navigable" waters and "public" waters. Streams in which the tide ebbs and flows constitute what are known to the common law as "navigable," while streams in which the tide does not ebb or flow, though capable of navigation, are "public" streams. It is the undisputed rule of the common law that land bordering on tide water extends only to the line of high water mark. And each State owns the beds of all tide waters, unless it grants them away. In regard to land bordering upon "public" streams, as distinguished from the streams in which the tide ebbs and flows, the rule is that whoever owns lands bounding upon such streams owns the soil to the center thereof, subject to the right of navigating its waters by the public. The language of a grant, or State legislation, may, however, modify this rule.



## Agricultural Review.

### BUTTE.

**ORCHARD PLOWING.**—Oroville Register: Lon Rose was in from Mt. Ida Thursday. He said he hurried with his orchard plowing in order to get through before the north winds dried up the land too much. He finished, but thought a number of others in the vicinity did not get their orchards in condition ere the land got too dry.

**GROUND DRIED OUT.**—J. E. Schram, who was up from Palermo Thursday, said the ground had dried out suddenly and considerable of it had not been plowed in the groves. He had turned on water to irrigate in order to plow in his grove, and others, he thought, would have to do the same.

**FROM WHEAT TO GRAPES.**—Biggs Argus: A. Bonslett is another of our adobe farmers who stuck to wheat raising for years before he would acknowledge that other products would pay better with less work and on a small acreage compared with wheat farming. So he finally secured a small ranch a mile south of Gridley, on which he recently realized from 1 1/2 acre of Sultana seedless raisin grapes \$340. He has five acres in bearing Sultanas, and so well has grape culture paid him, he has just completed planting twenty-five acres to Thompson's seedless vines, and he now says he would not exchange his thirty-acre vineyard for a whole section of wheat land.

### CONTRA COSTA.

**ALMOND CROP NOT PROMISING.**—Martinez Gazette: The almond crop in this county this year will be very small. The fruit is dropping already, and growers are at a loss to understand what is the cause of it. Jas. O'Hara, one of the largest growers in the eastern end of the county, stated that he did not believe his crop would amount to anything at all.

**MORE ABOUT ALMONDS.**—Clayton Correspondence Oakland Enquirer: The almond crop will be light here, if not a total failure, so assert the growers. A week ago all looked very promising, but the tender almonds are dropping to the ground for some unaccountable reason. A few almond growers state that the almonds were nipped by the frost, while the majority do not believe that the few light frosts during the past month were damaging at all.

### FRESNO.

**TO INVESTIGATE ALKALI SOILS.**—Republican: W. H. Helleman, who is to have the direction of the alkali drainage work in this neighborhood, has arrived from Washington, D. C. He is with the Bureau of Soils of the Department of Agriculture. The work which he is to direct has already been begun in Central colony, but some delay has been experienced owing to the quicksand encountered a few feet below the surface. Mr. Helleman's experience will come to the rescue here and it is expected that the work will go forward at a rapid rate. He will spend the next few days in examining the ground and will acquire such data as can be obtained quickly to show the area that will probably be drained by the tiling system that has been prepared ready for placing.

### GLENN.

**FINE CROP PROSPECTS.**—Willows Journal: The grain and hay crop in this county never looked better than just now; the fall sown grain has been all right all season, but the spring wheat on the river was beginning to need rain, which came opportunely on Sunday to the amount of .85. Another shower or two about May 1st will assure one of the greatest crops known in the county.

### KINGS.

**A MODEL FARM.**—Hanford Journal: Frank Rea, Sr., 12 miles northeast of Hanford, and who has been ditch tender for the People's Ditch Company for many years, has one of the model farms of Kings county. Only a few years ago Mr. Rea began improving his farm, as he could earn the means and support his

family by tending the water ditch. Now he owns 640 acres of land, 300 of which is in alfalfa and 65 acres in orchard. He has the old black walnuts, hickory nuts, English walnuts and persimmons, all bearing. He has a fine, large, well arranged farmhouse, a large barn, besides a shed that is built in which to milk cows and in which are sixty stalls. Mr. Rea is now milking forty cows. He is raising the Shorthorn and Jersey breeds. He has a cream separator, so he only has to haul the cream to the creamery. He says it pays to do his own separating, for two reasons: First, he claims he gets more cream to the pound; second, he says the milk is better for the calves and hogs when it is warm from the cows. Mr. Rea is raising a great many hogs on his farm; they are the Chester White stock. He says he has a Chester White sow that at one time had twelve pigs in one litter, and a few days ago she had eighteen, and they are all alive. Thirty pigs from one sow in a year—who can beat that?

### MERCED.

**COYOTES CATCH CALVES.**—Merced Star: On the Chowchilla ranch, where there are thousands of head of live stock, the coyote abounds to a degree. The "varmints" will watch their opportunity to establish friendly relations with young and unsophisticated calves. If the mother, in the course of her grazing, wanders a little distance from her offspring, a coyote will endeavor to engage the youngster in play or by gentle force separate it still further, and finally land it in some secure concealed retreat, where the coyote may feast upon its tender victim. The employees of the ranch have frequently witnessed the maneuvers of the beasts. Of course, when the incident is observed the calf is rescued, but no doubt more than one mysterious disappearance in the calf world is chargeable to the cunning coyote, the pirate of the plains.

### ORANGE.

**BIG CITRUS FRUIT YIELD.**—Santa Ana Blade: M. Wescott of Tustin has just sold his crop of lemons—nine acres—for \$3300, and Sam Tustin of Tustin has disposed of his late Valencia oranges—the product of four acres—at \$2 per box on the tree. It is estimated that there will be fully 1500 boxes of fruit on the four acres. While it can hardly be stated that these are average yields and prices, it demonstrates that Orange county soil, with fairly intelligent culture, can and does produce very satisfactory results.

**SCARCITY OF HELP.**—J. D. Thomas, the well-known orange grower and packer, complains of a scarcity of help, and says it is impossible to get pickers enough to move oranges out as fast as he would like to. He is now offering 4 cents per box for picking, which is 1 cent higher than the accustomed price, and still he cannot get all the men he wants. Growers are being paid \$1 per box on the trees for Sweets of all sizes ready for immediate delivery, and \$1.25 per box for delivery next month. Valencias will be marketed in June, July and August, and \$2 per box on the tree is now being offered for delivery in these three months.

### SAN BENITO.

**NEW PACKING COMPANY.**—Hollister Free Lance: Articles of incorporation of the Hollister Fruit Packing Company have been filed with the County Clerk of San Benito county. The purposes of the corporation are to carry on a general fruit and packing business. The principal place of business is Hollister, and it is to exist for fifty years. The amount of the capital stock is \$75,000, divided into 300,000 shares of the par value of 25 cents each. There are five directors who, with the number of shares subscribed by each, are as follows: H. C. Churchill, 30,000 shares; George E. Shaw, 10,000 shares; Owen Hubbard, 10,000 shares; J. M. Button, 10,000, and T. B. Young, 10,000.

### SAN BERNARDINO.

**A BIG PASTURE.**—Chino Valley Champion: The Chino Land & Water Co. commenced this week to fence about 8000 acres of the east side of the Chino ranch for grazing land. The area to be fenced extends from the east line of the ranch west as far as Euclid avenue, and from the north line to the south line of the ranch. The fence is of barbed wire. The company will in a few days get another trainload of cattle from Arizona, which will be put in the new pasture.

**A CREAMERY RECORD.**—The month of March was a record breaker with the Chino Valley Creamery Association. During that month the creamery received more milk and made more butter than during any previous month in its history. The totals for the month, as shown on the

Association's books, is 215,509 pounds of milk received for the month, or an average of 6951 pounds per day. The butter product for the month, figuring on an average of 4% milk, was 8620 pounds, or an average of 278 pounds per day. About half the butter was sold in Pomona, where its quality is appreciated. Most of the rest of it goes to Los Angeles, where it always commands the highest market prices.

### SAN DIEGO.

**FIELDS FULL OF FLOWERS.**—Secretary H. P. Wood, of the San Diego Chamber of Commerce, says of a trip from Escondido to San Diego that the country never looked better, and the prospects are good everywhere. The fields and hills are covered with verdure and California wild flowers. Great patches of blue here, of yellow there, and of creamy white in another place, add to the beauty of the country, and make it particularly hard to move fast, especially with a party of people who would like to go wild flowering on the slightest provocation.

### SAN JOAQUIN.

**LARGE TRANSFER OF WINE AND VINEYARD PROPERTY.**—Stockton Independent: After several weeks of negotiations, it is said that the firm of West & Son of this city has succeeded in perfecting matters to such a degree that the title of the property of Jacob Brack and A. Bauer, near Woodbridge, which consists of a ten-acre vineyard, winery and nearly 200,000 gallons of wine, will be transferred within the next few days. The deal is a large one, which, if it can be consummated, will mean the changing of \$67,000 from the hands of the buyers to the sellers. The wine alone is said to be worth over \$50,000.

### SANTA BARBARA.

**OLIVE CROP LARGEST EVER KNOWN.**—Santa Barbara News: The pressing of olive oil at the Cooper ranch has ceased,

## KENDALL'S SPAVIN CURE

the old reliable remedy for Spavins, Ringbones, Splints, Curbs, etc., and all forms of Lameness. It works thousands of cures annually. Cures without a blister, as it does not blister.



Elmore Sta., Ala., June 13, 1901.  
Dr. B. J. Kendall Co., Dear Sirs:—After using your Kendall's Spavin Cure and Kendall's Blisters, we find them the best we have ever used. We have cured Spavin with it when all other remedies failed. It is good for all you claim and more. We keep it on hand and wish every suffering man or beast had the opportunity of using it. Respectfully,  
C. E. KING and J. E. BAILEY.  
Such endorsements as the above are a guarantee of merit. Price \$1; six for \$5. As a liniment for family use it has no equal. Ask your druggist for Kendall's Spavin Cure, also "A Treatise on the Horse," the book free, or address  
DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.

**American Field and Hog Fence**

The best product of American skill in woven steel wire fence making. In rolls, ready to stretch and staple. The Fence of Economy. If your dealer hasn't it, write to American Steel & Wire Co., Chicago, New York, San Francisco, Denver.

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Hydraulic Engine pumps water by waterpower and never stops. Will carry water to any distance and force it over any obstacle at any height. No attention. No expense. Made in numerous sizes to fit all purposes. Write telling us how far you wish to carry water, elevation, fall, etc., and get complete plans and estimates. All Engines Sold on 30 Days' FREE TRIAL. Send for free catalogue.

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**COME INTO THE FOLD.**

Be one of the successful poultrymen. Our people make money out of chickens. They run

**The Petaluma Incubator** and Brooder too. Perfect regulation of heat, air, moisture. Hatches every fertile egg. Write for catalogue. Address nearest office.

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## Sharples "Tubular" Cream Separators.

If no agent will bring you a Sharples Separator, we will loan you one for trial free of cost. Though hundreds of our latest have gone on trial, not one has been returned. The truth is, they give more butter than any other separator, enough to pay big interest on the whole first cost, and they turn much easier (former capacity doubled without driving power) and are entirely simple, safe and durable.

Separator improvements come fast here. These new machines are far ahead of anything else known. We have been making superior separators for 19 years (longest in America) and are proud of them, but these new "Tubulars" discount anything either ourselves or anyone has ever made. Other agents will try and draw comparisons between their new machines and our old ones, but don't let them. Have a trial of a "Tubular" Dairy Separator, they are double the money's worth. Free book "Business Dairying" and catalogue No. 131.

Sharples Co., P. M. Sharples, Chicago, Ill. West Chester, Pa.



after the most successful run ever known at Elwood. Every one at the ranch has been surprised at the amount of oil yielded, as the crop has run far over all estimates. Early in the season, when it was found that the weather and rain conditions were right, it was thought that about 30,000 bottles of oil would be produced. That was Mr. Cooper's estimate and was considered by him as a conservative one.

### SANTA CRUZ.

**FRUIT ITEMS.**—Though Pajaro valley's 1901 apple crop was close to 2500 carloads, there are no apples in the local market and the packing houses are cleaned. Canker worms will soon appear. Horticultural Commissioner Rodgers recommends that trees be carefully inspected now for canker worm eggs, and that they be crushed whenever found. The eggs are in patches, on the under side of limbs, and from 8 to 10 feet from the ground. They can be easily reached with a step ladder. Crushing the eggs is a quick and effective way of destroying this pest.

### SOLANO.

**MONEY IN THE CATTLE BUSINESS.**—Dixon Tribune: Notwithstanding the contrary predictions of some of the country's calamity howlers, beef continues to bring good prices and is still advancing. The fellow who raised cattle and stayed with the business, regardless of the rantings of his pessimistic neighbor about inflated prices and glutted markets, is now glad he had a mind of his own.

**PURCHASED CATTLE.**—Cordelia X-Ray: Attorney Geo. A. Knight of San Francisco has purchased 125 head of cattle from Junker & Mulaney of Cordelia, who have several hundred head on the McKay ranch. Mr. Knight will remove the stock to his ranch in Mendocino county. The cattle purchased are full-blooded Durhams and they are some of the finest cattle ever seen in this county.

### SONOMA.

**MOULTON HILL RANCH SOLD.**—Cloverdale Reveille: Under judgment of foreclosure the well known Moulton Hill Vineyards property, near Cloverdale, was sold in Santa Rosa on Wednesday to Henry Cowell, of San Francisco, a lime and cement dealer. The price paid was \$18,804. The property was formerly owned by F. Albertz, and before that belonged to the Moulton estate, to which it reverted when the mortgage was foreclosed.

**A THREE-STORY BROODER HOUSE.**—Petaluma Courier: The new plant of the Must Hatch Incubator Co. is about completed. The three-story brooder house is quite a novelty. Recently there was a hatch of 310 chickens out of 319 eggs. The little chicks are all snow white, and it is worth while to go through the plant to see them.

### SUTTER.

**FRUIT PROSPECTS.**—Sutter County Farmer: While the frost season is not entirely over, the chances for damage from now on are lessening every day. The prospects generally are for a fair crop in this section, especially of peaches. Reports from the almond orchards are that some varieties are shy, especially the soft shells. The rain damaged some varieties of cherries, but there will be a pretty good crop after all. Prunes and pears are setting well. The grape vines are late coming out, but show good signs of making an average crop.

**Horse Owners! Use GOMBAULT'S Caustic Balsam**

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland O.



## THE HOME CIRCLE.

## "Countrified."

Do they call you "countrified?"  
Let it be your joy and pride,  
You, who love the birds and bees,  
And the whispers of the trees!  
Trust me, friend of flowers and grass,  
Little brown-faced lad or lass,  
Naught in all the world beside  
Equals being "countrified."

Up of mornings when the light  
Reddens on the mountain height;  
Hearing how the bird-throats swell  
With the joy they can not tell;  
Conscious that the morning sings  
Like a harp with unseen strings,  
Over which the breezes glide;  
This is being "countrified."

Roaming far, on summer days,  
Or when autumn woodlands blaze;  
Learning how to catch and tell  
Nature's precious secrets well;  
Filled with sunshine, heart and face,  
Or, where branches interlace,  
Dappled like the shy trout's side;  
This is being "countrified."

What though little fit to pose  
In the city's ways and clothes?  
There is vastly more to love  
In the brawn of nature's glove.  
Health and happiness and tan  
Are best fashions for a man.  
All who near to God abide  
Are in some way "countrified."

—James Buckham.

## A Pair of Tight Boots.

Mr. James Caswell's wife had been dead six months, and Mr. Caswell had worn a weed on his hat, and kept his handkerchief in his eyes, whenever the dear departed was mentioned, with the most exemplary propriety.

At the end of six months he considered that he had done his duty by the first Mrs. Caswell, and felt himself at liberty to be looking around for the second lady of the same name.

He needed a housekeeper, and his five little children needed the care of a mother.

He had fixed his eyes on the Widow Biggins, and, all things considered, perhaps he could not have made a better choice. She was about his age—forty-two; she was good looking, had about three thousand dollars' worth of property, and had just been jilted by Jeremiah Jenkins. And a woman who had just been jilted is generally all ready to heal her broken heart with another specimen of the same faithless sex.

Mr. Caswell broke the ice by sending the widow a squash. He raised a large quantity of squashes, and the bugs devoured all the widow's vines. Mrs. Biggins responded by sending him a mince pie with her compliments. And the next Sunday night, Mr. Caswell called to tell her how fond he was of mince pies, and how nice he thought hers was. After this the acquaintance progressed rapidly. Mr. Caswell bought a new buggy, and ordered a new pair of boots.

"Make 'em to fit close, Mr. Laster," said he, to the busy little shoemaker. "Seems to me I ought to wear eights instead of nines."

"Can't do it, sir," said the little man. "You've got a bunion as big as an onion on your right great toe, and your heels is the longest I ever seed, except on a gentleman of color."

The boots were finished, and sent home on Saturday night, and on Sunday Mr. Caswell had engaged to drive the widow over to Stilton Four Corners to church in the new buggy, and with the new boots on.

Early Sunday morning he began his preparations. He put on the thinnest pair of stockings he had, and made a trial of the boots. But they refused to go on. They were neat and handsome, and genteel, but they would not begin to make the acquaintance of Mr. Caswell's understandings. He tugged, and pulled, and sweat, and swore—all to no purpose.

The time for starting for Stilton drew nigh. He called in his two hired men—stalwart brothers—named John and Sam Steele. They took hold with a will—one hold of one strap, and the other hold of the other, while Mr. Cas-

well planted himself firmly in his chair.

And the result was, over went Caswell, chair, Sam, John, and all, upon the floor, breaking the dinnerpot to finders, and nearly knocking the life out of old Rover, who was sunning himself just behind his master on the hearth.

Caswell got up and rubbed his ringing head with vinegar.

"Confound it!" said he, "I didn't think it would be such a tight squeeze. Try it again, boys! I'll sit in the window this time, and see if you can pull the side of the house over!"

It was a long pull, and a pull-all-together, but it was all in vain.

"It's no use," said Sam, wiping the sweat from his forehead; "your stockings will have to come off."

So the stockings were removed, and by dint of a great deal of perseverance, the boots were got on to the feet intended for them.

The horse was already harnessed to the new buggy, and donning his Sunday beaver, Mr. Caswell limped out, and climbed into the carriage. The boots hurt awfully, but his feet looked pictures in them, he said to himself, contemplating them with admiration, and he had heard the widow admire small feet a great many times.

He soon had her by his side—radiant in a new pink bonnet and a green shawl, and they bowled right merrily over the hard track to the Corners.

The pain in Mr. Caswell's feet had subsided from the acute into a dull, sleepy ache—he seemed to feel cut off from his knees down—but what does a man care for feet and legs who is in love, when in the presence of the beloved object?

The conversation was sweetly interesting—he had managed to squeeze the widow's hand under the buffalo, and she had blushed and giggled just as he remembered the first Mrs. Caswell did when he was courting her.

Stilton was reached all too quickly. The services had not yet commenced, and the people were standing about under the trees in knots of half a dozen, talking of the weather and the crops.

Widow Biggins was smilingly triumphant. Caswell's was the finest turn-out in town, and she knew her new hat was becoming, and realized that she was killing half her female friends with envy. No wonder the woman was happy.

Caswell threw down the ribbons, and sprang lightly to the ground. But alas! he had forgotten his feet, which by this time were as good as dead from the terrible compression they had undergone, and when he struck it was on his head instead of on his feet. His new beaver was smashed in, and in falling off, it brought with it the "scratch" he had paid five dollars for, a few days before, to conceal the bald spot on the top of his cranium.

His fall frightened the horse—she set up her head and tail and with a frantic snort set off at a rousing pace down the road with the widow screaming and clinging to the seat of the buggy.

The sight of his former flame in distress, was too much for the tender heart of Jeremiah Jenkins, who was standing by. He unhitched old Dobbin, and springing into the wagon set out in hot pursuit.

This conduct maddened Caswell. He forgot the pain in his feet, and springing up he gave a great stamp which no shoemaker's thread could abide! The stitches gave way—the leather parted, and Caswell's feet protruded at right angles like the heads of two estranged turtles.

Down the road they all went at a slashing pace—first the widow in the new buggy—then Jeremiah in the old red wagon, then Caswell on a clean gallop with his long hair streaming behind, and then about a score of young men and boys, forgetting that it was Sunday, and that the minister saw them, in their eagerness to join the race.

The widow had climbed over the seat of the buggy, and was evidently intending to jump out behind—Jeremiah was urging on Dobbin and screaming to her to hold on—and Caswell, when his blown state would permit, was swearing like a trooper.

Faster and faster went Caswell's

horse, when suddenly one wheel struck a stump—the buggy was annihilated, and the widow bounced out on a bed of juniper bushes. Dobbin thought it was about time for him to distinguish himself in some way, so he turned suddenly out of the road, leaped a low stone wall, cleared himself from the harness, and went to feeding.

Jeremiah ran to the widow—lifted her up, said a few soft words to her with which we have no business—and she hid her face in his shirt front, and snivelled.

And when a little later, Caswell met the interesting couple they were riding together on old Dobbin, the widow with Jeremiah's arm around her, and her pink bonnet badly smashed, reclining on his shoulder.

It was all up with poor Caswell. He realized it instantly. A woman will forgive a man readily enough for being a sinner, but for cutting a ridiculous figure never!

Caswell tried to make his peace with her, but was very coldly told that he need not trouble himself to call on her, her time was very much taken up.

A month afterward she was married to Jeremiah Jenkins, and on that day Caswell burnt his tight boots with a grim sort of satisfaction that showed one plainly enough how the iron had entered his soul.—Clara Augusta in Vick's Family Magazine.

## Three Deep; or, Third Man.

The players arrange themselves in two circles, one circle within the other, the players some distance apart from side to side and each one in the outer circle immediately behind the one in the inner circle; all face inward. Two extra players, for whom there is no place in the circle, stand on the outside as chaser and runner. The latter may save himself from the chaser by standing in front of any two players (i. e., inside the circle), thus making a line three deep. He then is safe; but the outer one of the three is then "third man," and may be tagged. To save himself, he must run and take a place in front of another couple, but not the couple adjacent to him on either side. If a player is tagged, he becomes chaser, and the one who tagged him the runner. The game may be varied by having the two circles face each other, with a space between them for running. The runner, in seeking refuge, places himself between two players and the one toward whom he turns his back may be tagged. The runners and chasers may dash through the circle, but must not pause in it, except when the runner takes refuge.—The American Boy.

## Letters That Are of Little Value.

It is my judgment that the first thing a young man starting in life should do is to master the groundwork of his chosen calling, as taught by actual practice. No matter how highly educated he may be, when he makes a beginning, away from college, he ought to bear in mind that he has as much to learn that books do not contain, and professors never teach, as was imparted to him at his alma mater.

Letters of recommendation are of little value. It has grown to be the case that an individual is "sized up" for what he shows himself to be, and not according to some other person's written estimate. It really takes a year or two of hard knocks and rebuffs to bring a young fellow, who thinks his sheepskin is all he needs, to a point where he can properly estimate himself. When he reaches that stage he will begin to get on in the world.—F. Augustus Heinz.

## Breathe Through Your Nose.

In all kinds of atmosphere the breath should only be inhaled through the nose. An occasional breath of extra pure air through the mouth may be good, but in cars and most offices and rooms nose breathing is essential. A second rule is, since so much time spent is in cars and offices and rooms in earning a livelihood, and since these places are overheated and underventilated—

the heating and ventilation being out of the control of most of us—we must take in fresh air whenever possible, in order that we may restore the balance. The best times to do this will be early in the morning, when the air is freshest, and late at night, when deep breathing will help us to get sleep. We may breathe correctly while we are waiting in a street, and especially where streets meet. We can soon form an automatic habit of breathing properly on such occasions.—Chambers' Journal.

## The Daffodils.

I wandered lonely as a cloud  
That floats on high o'er vales and hills,  
When all at once I saw a crowd,  
A host of golden daffodils,  
Beside the lake, beneath the trees,  
Fluttering and dancing in the breeze.

Continuous as the stars that shine  
And twinkle on the Milky Way,  
They stretched in never-ending line  
Along the margin of a bay.  
Ten thousand saw I at a glance,  
Tossing their heads in a sprightly dance.

The waves beside them danced, but they  
Outdid the sparkling waves in glee;  
A poet could not but be gay  
In such a jocund company.  
I gazed and gazed, but little thought  
What wealth the show to me had brought.

For oft, when on my couch I lie  
In vacant or in pensive mood,  
They flash upon that inward eye  
Which is the bliss of solitude;  
And then my heart with pleasure fills  
And dances with the daffodils.

—Wordsworth.

## The Dutch Housewife.

Quiet, order and system are the prerogatives of the Dutch housewife, and the qualities, indeed, are characteristic of her country. "Hurry up," "Step lively," are the last words one hears as he boards the ship at Hoboken, and "Go Slowly," "Take your time," are the first to greet him in Holland.

The Holland woman seldom has time for outside interests, and for that reason the woman's club does not thrive on Dutch soil. She considers that her first duty is to her home and family.

When "mein vrouw" gives her hearty morning greeting, which is as bracing as a tonic, she has already cut the bread in thin slices and buttered them for the "ontbyt" (breakfast), and as her family appears she draws the egg with a little net from the water kettle.

No morning newspaper lies before "mynheer's" place, unless perchance he is fortunate enough to be first on the list of subscribers who have clubbed together for the purpose. This method insures, usually, the arrival of the paper some time during the day, probably by noon, but this delay is mitigated by the kindly disposed editor, who dates his journal one day ahead. The limited circulation of a newspaper in Holland necessitates a higher charge for it than for one in this country.

After breakfast, if the guest is conversant with the etiquette of the country, she will assist her hostess in washing the breakfast dishes. A quaint-looking wooden bowl is used in place of a dishpan, and the fragile china is dried on pure Dutch linen.

It is a delight to follow the Dutch housewife about on her morning duties. As the good dame goes, with her key basket on her arm, to the store closet, Betjie, the cook, follows in her wake, carrying with her a tray of picturesque looking jars, ready to be filled for the day's use. The store closet is sure to be of white and blue tiles, and to have shelves around the four sides of the room, all resplendent with white stone jars, each of which bears its label of "suiker," "bruine suiker," "thee" and the like. The old-fashioned brass scales occupy a table in the center of the room, and before filling the cook's utensils the careful housewife weighs the articles in demand. When asked why she did this, in view of the fact that a certain amount is sure to fill the jar, a Holland woman replied equivocally, "Because there is a right way



and wrong way, and I am doing it the right way."

Possibly it may be the day when the six weeks' wash comes home. If so, the next place to be visited is the attic, where the baskets have been hauled by the big wooden arm that extends from under the eaves to raise heavy or clumsy weights through a window into the house much as safes are raised in this country. The linen comes home rough dried, and is prepared for the mangle, and the press by the housewife herself. After dampening the pieces with a brush each one is folded with the greatest exactness and passed to the maids, two of whom are required to push the great rollers of the mangle back and forth.

As the pieces come from the mangle, mein vrouw places them in the press, which is somewhat similar to an office letter press. The linen remains in the press for at least ten days, when it emerges with a finish as soft as silk. The starched pieces are dampened and folded ready for the "strykster" who is hired to do that work. The manner of ironing sleeves is always interesting to an American. An iron bar with a ball on one end is used for the purpose, and this is heated and twirled about in the sleeve.

A visit to the linen chest of a Dutch housewife is always a delight. It may be noticeable that some piles of the snowy table and bed linen are tied with blue ribbon and others with pink ribbon. If so, it will be explained that each represents complete sets, one of which is in use this year and the other waiting its turn next year. The edges of the piles will be as regular as if they had been cut with a knife.

Oil cloth is often used in Dutch bedrooms, and after becoming accustomed to it one learns to like its cleanliness. It is invariably revarnished each year. A rug of generous size usually covers the center of the room.

Sometimes in the afternoon mein vrouw takes her best gown from its tissue-paper wrapping and arrays herself for calling. An American woman thus describes such a call: "After the maid had taken our cards and disappeared I gazed about the room, utterly at a loss to discover where we had entered or where we should make our exit. Just as a question had elicited from my companion, 'Hush, here comes mein vrouw,' madam entered, and as she did so it was with difficulty that I suppressed a scream, for a portion of the wall, picture and all, moved forward to admit her. Imagine, if you are able, the whole door papered, no wood showing at all, and, to complete the deception, a picture suspended on it. I should never be able to adapt myself to this weird phenomenon."

In the matter of social functions there are many interesting features to the American woman. A "thee drinken" is not what a Yankee woman would mean by a "tea drinking." To the Dutch an invitation to a "thee drinken" means that the guests shall arrive about seven o'clock in the evening, and that tea shall be served at once. Then there will be a game of whist or a quadrille, and a supper of cold sausage and possibly a pineapple about eleven o'clock. Ice cream is used only for formal affairs, its excellent quality being excelled only by its price. When one goes to a dinner she is expected to fee the maid who opens the door for her departure.

"What is the vervel?" (fee) is no unusual question to the Holland housewife when she is engaging a servant. All servants' fees and the small commissions go together into a box kept by the head of the house, and at the end of the year the amount is divided among the maid and men servants. At New Year's the younger generation calls upon the older people, without regard to sex.

With a seamstress at twenty-five cents a day and a dressmaker at forty cents a day, the Holland housewife does not find it necessary to do her own dressmaking and millinery, but every woman in the country can mend. Stocking darning in Holland is, indeed, an art, the Dutch woman replacing the worn part with a stitch unknown in this

land, which can with difficulty be told from the original stitch.—Sunday Tribune.

## DOMESTIC ECONOMY.

### Domestic Hints.

**FROZEN RICE PUDDING.**—To one quart milk add two tablespoons rice and three tablespoons sugar, and boil until it is reduced to a thick cream. Cool and freeze. When partly frozen add one pint cream and a wineglass sherry or white wine. Continue freezing until solid.

**BROILED FRESH MACKEREL.**—Split a mackerel through the back, remove the spine, score it slightly, and rub with a teaspoonful of olive oil; season with salt and pepper and broil on a brisk fire for ten minutes on the split side and one minute on the other. Lay it on a hot dish, spread butter over it and fine chopped parsley.

**APPLE AND CELERY SALAD.**—For this salad sour apples are the best. After paring and coring two large apples, cut them into quarter-inch squares. Take an equal quantity of chopped celery. Pour over this a French dressing made of vinegar and oil, seasoned with pepper and salt. Let this stand for five minutes, then fill lettuce leaves with the salad, pour mayonnaise dressing over each portion and serve.

**PARSLEY OMELET.**—Drop two eggs into a bowl; beat until broken, but not light; add two tablespoonsfuls of cold or lukewarm water. Turn into a hot pan well greased with butter; then with the spatula lift off the cooked eggs from the edges, letting the uncooked part run under on to the pan, continuing the lifting until the whole is of a soft, creamy consistency. Place where it will brown; just before folding sprinkle with one tablespoonful of chopped parsley. Fold, season and serve.

**POPOVERS.**—One pint of flour, three eggs, one pint of milk and one-half tablespoonful of salt. Beat the eggs sufficiently to mix smoothly with the milk. Stir the salt into the flour, then add enough of the milk and egg mixture to form a rather thick batter. When this has been rubbed perfectly smooth add the remainder of the liquid, and strain the whole to remove any lumps, and pour into tin cups or gem pans. Each cup should be half full. Bake in an even, moderate oven for three-quarters of an hour. Few housekeepers succeed in making good popovers, because the oven is usually too hot or the heat is allowed to die down before the popovers have browned. The fire should be built up so that it will not need replenishing while the oven is in use.

### Hints to Housekeepers.

Celery may be kept fresh for several days, if, after it has been cleaned and washed, it is put in an ordinary glass fruit jar, covered tight and put in a cool place.

Ginghams and prints will keep their color better if washed in water thickened with flour starch. Flour is very cleansing and will do the work of soap in one or two washings in the starch water. This, with the rinsing, will be sufficient, and the goods will look fresher than if washed and starched in the old-fashioned way.

The refreshments at an afternoon reception, as a rule, are very light, so as not to interfere with the heavier meal which comes later. Serve tea, coffee

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or chocolate with sandwiches and wafers or with ices, ice cream and cake, as your fancy dictates. Should one care to serve two courses, serve scalloped oysters or an oyster pattie on a plate with chicken salad on a lettuce leaf, a tiny hot roll, a pickle or olive. Serve ice cream, cake and coffee as a second course.

A few drops of oil of lavender in a silver bowl or ornamental dish of some kind, half filled with very hot water, and set in the dining room just before dinner is served, give a delightful and intangible freshness to the atmosphere of the apartment. Hostesses often put a small vessel in the parlor and dressing rooms when arranging the house for a festivity. The suggestion is especially valuable to the hostess in a small apartment, which sometimes in the bustle of preparation becomes stuffy.

Don't buy food that has been in cold storage if you can secure fresh food; sometimes turkeys and fish are kept frozen for years. All fresh meat that has been frozen loses its firmness and flavor when allowed to thaw, which is necessary before cooking. Firm fish and fresh meat are essential to good and wholesome living. You will see offered for sale smelts and green smelts, and many housekeepers do not know the difference, which is just this: Green smelts are freshly caught; smelts not bearing this label are frozen. The frozen ones become tasteless and flabby when cooked. Don't buy foreign fresh fruits or vegetables when the natives are plentiful. Don't put celery in the refrigerator just as it comes from the market; wrap it in a wet cloth, then in a paper, and lay it on the ice until needed. Don't depend upon extra heat when you want water to boil quickly, but add a little salt to the water and watch the gratifying results. Don't throw anything away because it is too salty, add brown sugar until it is just right.

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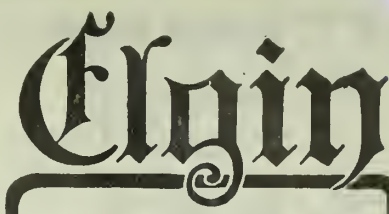
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# S. F. Market Report.

## Produce Market.

SAN FRANCISCO, April 16, 1902.

### CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July
Wednesday.....	71½@72½	72½@73½
Thursday.....	71½@72	72 @72½
Friday.....	71½@73	72½@73½
Saturday.....	72½@73½	73½@74½
Monday.....	73@72½	74½@73½
Tuesday.....	73 @74	74½@75

### CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday.....	42½@43½	33½@34
Thursday.....	42½@41½	33½@33½
Friday.....	41½@42½	33½@34½
Saturday.....	41½@42½	34½@35
Monday.....	43 @42	35½@34½
Tuesday.....	42½@43	34½@35½

### SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 08½@—	1 06½@1 06½
Friday.....	1 08½@1 09½	1 07½@1 07
Saturday.....	—@—	1 07½@1 07½
Monday.....	—@—	1 07½@1 07½
Tuesday.....	1 09½@1 10½	1 07½@1 08
Wednesday.....	1 10½@1 10½	1 07½@1 08

### WHEAT.

There has been no active wheat trading in this center since last review, either in the spot or speculative market, and especially have transactions in the spot market been of light volume. The supply of ships engaged for wheat loading is being reduced and is lighter than for many months, there being only twelve ships now in harbor under charter. These ships represent a carrying capacity of about 30,000 tons. A year ago the engaged list in port was still lighter, but two years ago was nearly 50% heavier than at this date. The ships now here and disengaged have an aggregate carrying capacity of about 40,000 tons, while a year ago the list footed up less than 8,000 tons and was slightly under latter figure two years ago. The number of ships headed this way is heavier than at corresponding date in either 1901 or 1900. This year's fleet bound this way shows a carrying capacity of 300,000 tons, as against 280,000 tons a year ago and 260,000 tons in 1900. Owing to the present low ocean freight rates, however, the increase in ocean tonnage headed this way is not likely to be marked in the near future. Much of the wheat now in the State is being held off the market and it looks as though trade in this line would be light for the next few months. Market closed quiet, but firm, with very little offering.

California Milling.....	1 12½@1 15
Cal. No. 1 shipping, alongside.....	1 08½@1 11½
Oregon Valley.....	1 10 @1 12½
Washington Blue Stem.....	1 10 @1 15
Washington Club.....	1 07½@1 10
Off qualities wheat.....	1 05 @1 07½

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	6s2¼d@6s3d	6s¼d@6s-d
Freight rates.....	35@36½s	23@23½s
Local market.....	97½@1 01½	1 10@1 11½

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

### CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.08½@1.10½.
December, 1902, delivery, \$1.06½@1.08.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.07½@1.08; May, 1902, \$1.10½@1.10½.

### FLOUR.

There are no changes to note in quote-above values, but there is no special firmness observable and trade is far from brisk. Shipments to Central and South America are of fair average volume, but there is not much being forwarded in other directions. The movement to China at present is unusually light. Business on local account is rather slow. Stocks are considerably in excess of immediate demands.

Superfine, lower grades.....	32 40@2 50
Superfine, good to choice.....	2 60@2 90
Country grades, extras.....	3 15@3 35
Choice and extra choice.....	3 35@3 65
Fancy brands, jobbing.....	3 65@3 75
Oregon, Bakers' extra.....	2 90@3 25
Washington, Bakers' extra.....	2 90@3 40

### BARLEY.

Market continues to show more firm-

ness for feed descriptions than for the higher grades. Owing to barley being the cheapest feed cereal on the list it has been lately in more than ordinarily good request, not only on local account, but for shipment to northern coast points and also to the Hawaiian Islands. Feed barley is bringing almost if not fully as good figures as are obtainable in a wholesale way on European account for brewing grades. Spot stocks are not heavy of barley of any description, and indications are that there will not be much of this cereal carried over into the coming season.

Feed, No. 1 to choice.....	95 @96½
Feed, fair to good.....	92½@95
Brewing, No. 1 to choice.....	96½@98½
Chevalier, No. 1 to choice.....	1 10 @1 15
Chevalier, poor to fair.....	95 @1 05

### OATS.

Buyers are operating lightly, not being inclined to anticipate future needs to any noteworthy extent. Prices are without radical change, but to effect free transfers the granting of material concessions to buyers would be necessary. Stocks are not particularly heavy and are mostly in few hands.

White Oats, fancy feed.....	1 40 @1 42½
White, good to choice.....	1 35 @1 40
White, poor to fair.....	1 27½@1 32½
Gray, common to choice.....	1 27½@1 35
Milling.....	1 35 @1 40
Surprise, good to choice.....	1 40 @1 45
Black Russian.....	1 15 @1 27½
Red.....	1 22½@1 37½

### CORN.

Only moderate quantities arriving, and it is not likely that there will be any very pronounced increase in offerings for some months to come. Values continue on a comparatively high plane. Quotations are based mainly on asking figures, and are obtainable only for good to choice. Damp or otherwise seriously defective corn has to go at materially lower figures to secure prompt custom.

Large White, good to choice.....	1 35 @1 45
Large Yellow.....	1 35 @1 45
Small Yellow.....	1 45 @1 50

### RYE.

Market is moderately firm at the quotations noted, but the firmness is more due to light offerings than to active inquiry at full current figures.

Good to choice.....	92½@95
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### BUCKWHEAT.

Scarcely anything doing and quotations are largely nominal. There is little offering and demand for the time being is insignificant.

Good to choice.....	1 55 @1 70
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### BEANS.

There is no improvement to note in the condition of the market for most kinds of white beans. Quotations for Lady Washingtons and Small Whites show further reduction, and at the reduced rate there is no disposition displayed on the part of buyers to take hold freely. There are some large speculative holdings which cost about 50% above present values. Most of the dealers are carrying some high priced white beans of previous season, and this makes them very cautious about operating at present at any figure. Limas are also quotably lower and are slow at the decline. Colored kinds are not meeting at the moment with any very active demand at full current rates, but are more readily salable than white beans, and values are being much better maintained on colored than on white descriptions. Black-eyes continue to be firmly held, under very limited offerings.

Pea, fair to good, 100 lbs.....	3 25 @3 50
Small White, good to choice.....	1 90 @2 10
Lady Washington.....	2 00 @2 15
Pinks.....	1 85 @2 00
Bayos, good to choice.....	2 40 @2 60
Reds.....	2 00 @2 25
Red Kidney.....	3 50 @3 75
Limas, good to choice.....	3 40 @3 50
Black-eye Beans.....	4 25 @4 50
Garbanzos, large.....	2 00 @2 25
Garbanzos, small.....	1 25 @1 50

### DRIED PEAS.

No changes of noteworthy mention have been developed in this market the current week. There are liberal stocks of Green or Blue peas and more than enough of Niles to accommodate the immediate demand. Owing to the light inquiry at present, there is little other than asking figures upon which to base quotations.

Green Peas, California.....	1 50 @2 00
Niles Peas.....	1 75 @1 80

### WOOL.

Owing to labor strikes in some of the large Eastern woolen mills, the wool market on the Atlantic side has been lately dull and weak. In consequence of the depression East, the local market has been slow, and will likely so continue until labor troubles in the East have been adjusted. Quotations are continued as before, but are almost wholly nominal at this date, the majority of dealers not car-

ing to operate until the outcome of existing difficulties East has been determined.

### SPRING.

Northern Cal., free.....	14 @16
Northern Cal., defective.....	13 @14
Middle County, free.....	13 @15
Middle County, defective.....	12 @13
Southern, 7 mos.....	9 @11
Southern, 12 mos.....	9 @10
Foothill.....	11 @13
Oregon Valley, fine.....	14 @15
Oregon Valley, coarse to medium.....	12 @13
Eastern Oregon, choice.....	11 @13
Eastern Oregon, fair to good.....	9 @10
Nevada, as to condition.....	12 @15

### HOPS.

The local market is lifeless, so far as wholesale trading is concerned. Jobbers are quoting 15@17½c., but these figures are obtainable only in a moderate way from second hands. Some contracting of coming crop is reported within range of 10@12½c., as to section and reputation of brand. A New York authority reports the situation East as follows: "Receipts have fallen off materially of late and are likely to show still further shrinkage, as the quantity of hops back is reported very light in all parts of the country. Some of the counties in this State have none left, and the other sections are better cleared than for many years. Growers on the Pacific coast are holding comparatively few lots, but dealers still have some stock which they will forward from time to time. The unusually strong statistical position naturally affects the views of holders here, and there has been very general disposition to ask more money for nearly all qualities. Dealers are not trying to do business on the market, but are holding stock for the brewers' trade, which gives promise of improvement when the weather becomes warmer. State hops are particularly strong and choice lots are commanding 18½@19c. Some of the favorite growths of Pacifics are also held at those figures, but are more difficult to place at the price."

### HAY AND STRAW.

Values for hay continue at last quotable range, but market is not displaying any special firmness. Quotations are held in position more through the careful handling of consignments and the absence of undue pressure to realize than through inquiry from either large or small operators. Buyers in most instances are inclined to operate slowly.

Wheat, good to choice.....	9 00@12 00
Wheat and Oat.....	9 00@11 00
Tame Oat.....	8 50@10 50
Wild Oat.....	8 00@9 50
Barley and Oat.....	8 00@10 00
Alfalfa.....	9 00@11 00
Clover.....	7 00@8 50
Compressed.....	9 00@12 00
Straw, ½ bale.....	40 @55

### MILLSTUFFS.

Bran was not in heavy receipt and asking prices were advanced, but not much was required to satisfy the demand. That the higher figures will be long maintained is not probable. Other mill offal was held at practically unchanged figures. Market for Rolled Barley was firm. Milled Corn was steadily held.

Bran, ½ ton.....	15 50@17 00
Middlings.....	18 00@20 00
Shorts, Oregon.....	16 00@18 00
Barley, Rolled.....	20 00@21 00
Cornmeal.....	28 50@29 50
Cracked Corn.....	29 00@30 00

### SEEDS.

There have been moderate receipts of Mustard and Flaxseed the current week. Quotable values for both kinds remain as last noted. Some shipments of Alfalfa have been made to Australia. Remaining supplies of this variety are of small proportions, admitting of only slight jobbing operations.

	Per ctt.
Alfalfa, Cal.....	—@—
Alfalfa, Utah.....	—@—
Flax.....	2 25@2 50
Mustard, Yellow.....	3 25@3 50
Mustard, Trieste.....	2 50@2 85
Canary.....	3¼@3½
Rape.....	1¾@2¼
Hemp.....	3¼@3½

### BAGS AND BAGGING.

Grain bags are being very steadily held, both for immediate and future delivery, and little prospect of prices ruling easier this summer, unless it be late in the season. Wool sacks are in moderate request, with supplies sufficient for requirements and prices quotably unchanged.

Calcutta Grain Bags, buyer June-July.....	6½@6¼
Calcutta Grain Bags, spot.....	6 @6½
San Francisco Grain Bags, 22x36, spot.....	6 @6½
San Quentin Bags, ½ 100.....	5 55@—
Wool Sacks, 4 lbs.....	35 @36
Wool Sacks, 3½ lbs.....	32 @33
Fleece Twine.....	8¼@—
Gunnies.....	—@—
Bean Bags.....	5¼@5½
Fruit Sacks, cotton, three sizes.....	5¼, 6, 6½
Fruit Sacks, Jute.....	7 @7½

### HIDES, PELTS AND TALLOW.

Market is showing much the same condition as for a week or two preceding.

Dry Hides are in very fair demand for shipment at steady values. Wet Salted are not in very active request on local account, but for desirable offerings current rates are being tolerably well maintained. Pelt market is quiet, but fairly steady. Tallow is in moderately good demand at the figures quoted.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10½@—	8½@—
Medium Steers, 48 to 56 lbs.....	9 @—	7½@—
Light Steers, under 48 lbs.....	8 @—	7 @—
Heavy Cow Hides, over 50 lbs.....	9 @—	7 @—
Light Cow Hides, under 50 lbs.....	8 @—	7 @—
Stags.....	6 @6½	—@—
Wet Salted Kip.....	8 @—	7 @—
Wet Salted Veal.....	9 @—	7 @—
Wet Salted Calf.....	10 @—	9 @—
Dry Hides.....	16 @—	14 @—
Dry Kip and Veal, 11 to 16 lbs.....	14 @—	12 @—
Dry Calf, under 4 lbs.....	17 @—	15 @—
Salted Horse Hides, large.....	2 75 @—	—@—
Salted Horse Hides, medium.....	2 25 @—	2 50 @—
Salted Horse Hides, small.....	1 25 @—	—@—
Dry Horse Hides, large.....	1 75 @—	—@—
Dry Horse Hides, medium.....	1 50 @—	—@—
Dry Horse Hides, small.....	1 00 @—	—@—
Dry Colts' Hides.....	50 @—	—@—
Pelts, long wool, ½ skin.....	80 @—	80 @1 20
Pelts, medium, ½ skin.....	65 @—	65 @75
Pelts, short wool, ½ skin.....	40 @—	40 @60
Pelts, shearing, ½ skin.....	15 @—	15 @30
Deer Skins, best summer.....	35 @—	—@—
Deer Skins, good medium.....	—@30	—@30
Deer Skins, thin winter.....	—@30	—@30
Elk Hides.....	10 @—	12 @—
Tallow, good quality.....	5½ @—	—@—
Tallow, No. 2.....	4½ @—	4½ @—
Goat Skins, perfect.....	30 @—	37½ @—
Goat Skins, small.....	10 @—	20 @—
Kid Skins.....	5 @—	10 @—

### HONEY.

Demand is not very active, and market cannot be termed firm, although quotable values remain without important change. Considerable honey of last crop is now being offered, which up to a few weeks ago had been held off the market. New crop is expected to arrive in wholesale quantity in the very near future.

Extracted, White Liquid.....	5 @—
Extracted, Light Amber.....	4½@—
Extracted, Amber.....	4 @—
White Comb, 1 lb frames.....	10 @12½
Amber Comb.....	7 @10
Dark Comb.....	6 @7

### BEESEX.

Stocks continue of very limited proportions. Demand is fair and previously quoted values are being maintained.

Good to choice, light, ½ D.....	25 @28
Dark.....	24 @25

### LIVE STOCK AND MEATS.

Market for Beef is moderately firm at quotably unchanged values, and is not likely to rule materially easier in the near future. Mutton is selling to about as good advantage as for some weeks past, offerings of desirable quality not being excessive. Veal of proper age did not lack for custom at full current rates. Lamb was in fair receipt and market was slightly easier. Hogs were not in large supply and sold at fully as stiff figures as preceding week, although increased offerings and a more favorable market for buyers are among the probabilities of the near future.

Beef, first quality, dressed, net ½ D.....	7 @7½
Beef, second quality.....	7 @—
Beef, third quality.....	6 @6½
Mutton—ewes, 8@8¼c; wethers.....	8½@9
Hogs, hard grain fed, 125 to 200 lbs.....	6½@6½
Hogs, small, fat.....	6½@6½
Hogs, large, hard, over 200 lbs.....	5½@6
Hogs, soft or acorn fed.....	5 @—
Hogs, country dressed.....	7¼@7½
Veal, small, ½ D.....	8 @8½
Veal, large, ½ D.....	8 @9
Lamb, spring, ½ lb.....	11½@—

### POULTRY.

Market for most kinds of poultry has shown a generally easier tone than last week. There were increased arrivals of both domestic and Eastern. The cost of imported, however, did not admit of it being sold here at what could be termed very low figures. Chickens received the most attention, and both young and old of desirable size and in good condition brought fair average prices. Very small Broilers were neglected. Turkey Gobblers, especially old ones, were in poor request.

Turkeys, dressed, choice.....	15 @17
Turkeys, alive, Hens, ½ lb.....	15 @16
Turkeys, alive, Gobblers, ½ lb.....	14 @15
Hens, California, ½ dozen.....	4 50@6 00
Roosters, old.....	4 50@4 75
Roosters, young (full-grown).....	6 50@8 00
Fryers.....	5 00@6 00
Broilers, large.....	4 00@4 50
Broilers, small to medium.....	2 00@3 00
Ducks, old, ½ dozen.....	4 50@5 00
Ducks, young, ½ dozen.....	7 00@8 00
Geese, ½ pair.....	1 50@1 75
Goslings, ½ pair.....	2 25@2 50
Pigeons, old, ½ dozen.....	1 50@1 75
Pigeons, young.....	2 00@2 25



**BUTTER.**

Owing to a marked decrease in shipping orders and some increase in arrivals, the tendency has been to lower prices. Some dealers are endeavoring to depress values below existing levels, with a view to packing and storing on speculative account, but it is doubtful if they succeed in getting prices materially lower, as the season is pretty well advanced and very little butter has yet been stored.

Creamery, extras, # lb.	18 @ 19
Creamery, firsts.	17 @ 18
Creamery, seconds.	17 @ 18
Dairy, select.	17 @ 18
Dairy, firsts.	16 @ 17
Dairy, seconds.	15 @ 16
Mixed store.	15 @ 16
Creamery in tubs.	15 @ 16
Pickled Roll, # lb.	15 @ 16
Firkin, California, choice to select	15 @ 16
Firkin, common to fair.	15 @ 16

**CHEESE.**

Buyers are not taking hold of domestic product very freely, and as there is considerable new cheese offering, with sellers anxious to realize as speedily as possible, the market presents an easy tone. Eastern cheese is in light stock and the market for the imported article is firm.

California, fancy flat, new.	9 1/2 @ 10
California, good to choice old.	9 1/2 @ 10 1/2
California, fair to good.	9 @ 9 1/2
California, "Young Americas".	9 @ 10 1/2

**EGGS.**

Never has the speculative demand for eggs to go into cold storage been more active than this spring. Packers have been paying from 13 1/2 @ 15 1/2 c, as to locality, size, color and other conditions. Few have been secured under 14c. The warm weather will likely soon cause a wider range in prices, but that good eggs will sell this season under current levels is not probable.

California, select, large, white and fresh.	15 @ 15 1/2
California, select, irregular color & size.	14 1/2 @ 15
California, good to choice store.	13 1/2 @ 14 1/2
California, common to fair store.	13 @ 14
Eastern, good to choice.	13 @ 14
Cold Storage.	13 @ 14

**VEGETABLES.**

Fresh vegetables of most kinds now in season were in fairly liberal receipt. While there were not many radical changes in quotable values, the general tendency of the market was to easier figures than had been ruling. Rhubarb sold at a material decline. Many of the Peas now arriving are selling by the sack instead of by the pound. The supply of Yellow Danver Onions continued in excess of the demand. Choice Australian Onions have been offering at \$2.75 per cental.

Asparagus, # box.	1 25 @ 2 25
Beans, String, # lb.	8 @ 10
Beans, Wax, # lb.	8 @ 10
Cabbage, choice garden, # 100 lbs.	50 @ 10
Cauliflower, # dozen.	1 @ 1
Cucumbers, Bay, # large box.	1 @ 1
Egg Plant, Los Angeles, # lb.	17 1/2 @ 20
Garlic, # lb.	1 1/2 @ 2 1/2
Mushrooms, # lb.	1 @ 1
Onions, Yellow Danver, # cental.	1 50 @ 2 25
Peas, Sweet garden, # lb.	2 @ 3
Peppers, Green, Los Angeles, # lb.	8 @ 10
Peppers, Bell, # box.	1 @ 1
Rhubarb, # box.	35 @ 75
Squash, Marrowfat, # ton.	20 00 @ 25 00
Summer Squash, # box.	75 @ 1 25
Tomatoes, # box.	75 @ 1 25

**POTATOES.**

The market for desirable qualities of old potatoes continued fully as favorable to the selling interest as during preceding week. Aside from Oregon Burbanks, offerings of table potatoes were of light volume, and Oregon product was in lighter receipt than earlier in the month. Choice Oregon sold up to \$1.85 on wharf. Early Rose for seed were held mainly within range of \$1.75 @ 2.00. Sweet potatoes were in moderate receipt and were offered at reduced rates, with demand light.

Burbanks, Salinas, # 100 lbs.	1 30 @ 1 55
River Burbanks in sacks, # cental.	1 40 @ 1 60
Petaluma and Tomales Burbanks.	1 40 @ 1 85
Oregon Burbanks.	1 40 @ 1 50
River Reds.	1 40 @ 1 50
New Potatoes, # lb.	2 1/2 @ 3 1/2
Sweets, Merced, # cental.	1 75 @ 2 00

**The Fruit Market.**

**FRESH FRUITS.**

Strawberries have been arriving very irregularly, making it difficult to give quotations for same, but as weather is now more favorable for ripening, daily receipts are looked for from this date. Late sales have been mainly within range of 75c @

\$1.25 per drawer, as to kind and condition, the extreme figure being quotable only for choice Longworth. Apples offering are mainly out of cold storage and are going at generally unchanged rates. Some 5-tier Oregon Newtown Pippins of high grade sold at \$1.50 @ 1.75 per box.

Apples, # fancy, 4-tier box.	1 75 @ 2 25
Apples, good to choice, # 50-lb. box.	1 25 @ 1 75
Apples, common to fair, # 50-lb. box.	75 @ 1 00

**DRIED FRUITS.**

The market for evaporated and dried fruits shows much the same condition as noted in last review. There are no changes to record in quotable values, and for most descriptions the market is firm at the quotations. Business is wholly of a jobbing character and this must continue to be the case during the balance of the season, as supplies in the hands of growers are practically exhausted, and stocks of most descriptions now held by jobbers are not of sufficiently large volume to admit of wholesale operations. Some dried fruit is going East, mainly assorted cars, to the smaller points of distribution. Dealers in the large Eastern centers are not in the market at present as buyers, desiring to wholly exhaust their holdings before the opening of the new season. It is not at all certain that the large Eastern handlers have enough fruit to carry them through the early summer months, but there is no doubt that they will not buy any more of last year's product unless actually compelled to, and then only to cover most immediate and urgent needs. It is probable that conditions and prices will remain much as they now are until new fruit begins to come forward. Should there be any special demand through the next few months, it would likely stiffen values temporarily. No fears are entertained that there will be any necessity of carrying into the new season any noteworthy quantity of 1901 fruit. Prunes of 1900 crop are still hanging in the balance, to the extent of 300 or more carloads, awaiting consumers.

**EVAPORATED OR BLEACHED.**

Apricots, Royal, choice, in sacks, # lb.	9 @ 10
Apricots, Moorpark.	10 @ 12
Apples, in 50-lb boxes, rings, pressed, fancy.	8 1/2 @ 9
Apples, 50-lb boxes, rings, pressed, good to choice.	7 1/2 @ 8 1/2
Nectarines, # lb.	5 @ 6
Peaches, unpeeled, fancy.	8 @ 9
Peaches, unpeeled, choice.	6 1/2 @ 7 1/2
Peaches, peeled, in boxes.	12 @ 14
Pears, halves, choice to fancy.	7 @ 10
Plums, Red and Black, pitted.	5 @ 6
Plums, White and Yellow.	5 @ 6
Prunes, 4 sizes, in bags, 3 1/2 @ 3 3/4 c; 50-60s, 4 1/2 @ 4 3/4 c; 60-70s, 4 1/2 @ 4 3/4 c; 70-80s, 3 1/2 @ 3 3/4 c; 80-90s, 3 @ 3 1/2 c; 90-100s, 3c @ 1; these figures for 1901 crop.	

**COMMON SUN-DRIED.**

Apples, sliced.	4 @ 5
Apples, quartered.	5 1/2 @ 5 3/4
Peaches, unpeeled.	6 @ 6 1/2
Pears, prime halves.	5 @ 5 1/2
Plums, unpitted, # lb.	1 1/2 @ 2 1/2

**RAISINS.**

Nothing new to relate, market being quiet and no changes to record in quotable rates. Holders are displaying no uneasiness, as the stocks they are carrying are decidedly light.

Following are the prices for 1901 crop in carload lots:

Loose Muscatels—	Per lb.
4-crown.	6 1/2 @ 7
3-crown.	6 @ 6 1/2
2-crown.	5 1/2 @ 6
Seedless Muscatels.	5 1/2 @ 6
Seedless Sultanas.	5 1/2 @ 6
Thompson's Seedless, bleached.	8 1/2 @ 9 1/2
Seeded—	
3-crown, 1-lb. carton.	7 1/2 @ 8
2-crown, 1-lb. carton.	6 1/2 @ 6 1/2
London Layers, 20-lb. boxes—	
2-crown.	—
3-crown.	—

**CITRUS FRUITS.**

Oranges were not in heavy stock and with warmer weather the demand was more active, causing the market to rule firmer for all desirable qualities. Medium size Navels were most in request and sold to best advantage. Lemon market was without quotable change, but tendency was to more firmness on choice to select stock. Limes were in reduced supply and higher.

Oranges—Navels, # box.	1 50 @ 3 50
Mediterranean Sweet.	1 75 @ 2 50
Tangerine, quarter box.	75 @ 1 25
Seedlings, # box.	1 25 @ 2 00
Lemons—California, select, # box.	2 25 @ 2 75
California, good to choice.	1 50 @ 2 00
California, common to fair.	75 @ 1 25
Grape Fruit, # box.	1 25 @ 2 50
Limes—Mexican, # box.	4 50 @ 5 00

**NUTS.**

There are very few Almonds or Wal-

nuts remaining, hardly enough of either to warrant quoting in a regular way. Market for both kinds is very firm. Peanuts are ruling steady.

California Almonds, shelled.	16 @ 19
California Almonds, paper shell, # lb.	12 @ 13
California Almonds, soft shell.	9 @ 10
California Almonds, hard shell.	5 @ 6
Cal. White Walnuts, No. 1 soft shell.	10 @ 12
Cal. White Walnuts, No. 2 soft shell.	8 @ 10
Cal. White Walnuts, No. 1 hard shell.	9 @ 10
Cal. White Walnuts, No. 2 hard shell.	7 @ 8
Peanuts, California, fair to prime.	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.	5 1/2 @ 6
Pine Nuts.	5 @ 6

**WINE.**

There have been no appreciable changes in the condition of this market since date of last review. Business is of a light order, so far as wholesale transfers from the hands of growers are concerned. Dry wines of last year's vintage remain quotable wholesale at 22 @ 26c per gallon, as to quality, but extreme figure is more in accord with the views of growers than with the bids or ideas of large buyers. Receipts of wine last month at San Francisco were 1,806,465 gallons, as against 1,636,995 gallons for corresponding month last year, showing an increase of 169,467 gallons.

**Produce Receipts.**

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.	145,741	5,390,912
Wheat, centals.	283,786	8,706,587
Barley, centals.	153,182	5,618,031
Oats, centals.	6,185	746,016
Corn, centals.	1,517	93,091
Rye, centals.	780	263,506
Beans, sacks.	5,896	640,166
Potatoes, sacks.	20,878	1,195,267
Onions, sacks.	1,948	178,655
Hay, tons.	2,344	120,256
Wool, bales.	2,723	50,210
Hops, bales.	3	8,780

**EXPORTS BY SEA.**

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.	46,644	3,773,050
Wheat, centals.	278,803	8,066,073
Barley, centals.	137,947	4,036,165
Oats, centals.	811	3,582
Corn, centals.	—	9,387
Beans, sacks.	42	23,405
Hay, bales.	1,435	14,355
Wool, pounds.	—	545,331
Hops, pounds.	1,879	492,800
Honey, cases.	51	6,060
Potatoes, pack's.	2,061	46,497

**California Dried Fruit at New York.**

NEW YORK, April 16.—Evaporated apples, common, 7 @ 8 1/2 c; prime wire tray, 9 @ 9 1/2 c; choice, 9 1/2 @ 10 c; fancy, 10 1/2 @ 11 c.  
California Dried Fruits.—Trade is mostly of a jobbing order, but at generally steady values.  
Prunes, 3 1/2 @ 7 c.  
Apricots, Royal, 10 @ 13 c; Moorpark, 11 @ 14 c.  
Peaches, unpeeled, 8 @ 10 c; peeled, 14 @ 18 c.

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sorts of lamp chim-  
neys: mine and the  
rest of them.

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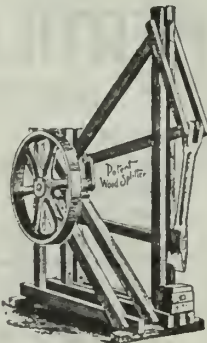
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### Citrona Colony.

We are glad to note by the Sacra-  
mento valley papers that the colony  
enterprise in Glenn county projected  
by Mr. R. J. Trumbull of the pioneer  
seed firm, Trumbull & Beebe of this  
city, is making commendable progress.  
The Orland Register of last week gives  
the following interesting statement:  
About the first of last January active  
work was begun on a tract of land  
near town known as Citrona Park. A  
plow new to this section—the Secre-  
tary—with its subsoiler attachment,  
being drawn by a team of six horses,  
has turned over and stirred up the soil  
to a depth of 15 inches. This plow has  
been kept in motion every favorable  
day since. The planting of fruit trees  
of the best known market varieties,  
under the leadership of E. G. Davis, is  
being vigorously prosecuted. Already  
all, or nearly all, of the deciduous fruit  
trees intended to be planted on this  
tract this season are in their places.  
The work of staking and digging holes  
preparatory to the planting of several  
thousand orange and lemon trees has  
been commenced, and now that the soil  
is warm and in good condition this work  
will be carefully and vigorously pushed  
forward. When the planting has been  
completed it will aggregate, perhaps,  
the largest number of fruit trees set  
out in one season at any one point in  
this county. The sinking of wells on  
this tract has demonstrated that there  
is an abundance of water underlying  
this portion of our great valley, and  
at the same time that the same good  
quality of soil continued without change  
of character for from 10 to 14 feet  
from the surface. Citrona Park has  
certainly made an excellent beginning,  
and is sure to prove itself a very im-  
portant part of our county and State.  
We need and should have more such.

### A Cause for American Catarrh.

It is a well-known fact that modern  
changes of temperature induce ca-  
tarrhal affections, and it is also evident  
that the best prevention of a "cold"  
is a ready adaptation to the varying  
conditions of an uncertain climate. The  
latter implies a certain resisting qual-  
ity of the respiratory mucous mem-  
branes which must be necessarily de-  
veloped along rational lines. The  
hardening processes thus become ques-  
tions of vitality, habit and environment.

The old Indian explained his immunity  
against low temperature by explaining  
that he was "all face." It was with  
him the habit of exposure to inclem-  
encies and its reactive protecting  
tendency. The other extreme is seen  
in the coddling process which our  
modern methods of civilization encour-  
age. "When houses were made of  
willow, the men were made of oak."  
Our superheated houses reverse these  
old-time conditions.

The dry, hot air of the modern dwell-  
ing is undoubtedly the most prolific of  
all the predisposing causes of catarrhal  
troubles. The mucous membranes are  
thus placed in the worst possible con-  
dition for resisting the impression of  
the outside atmosphere. Their natural  
protective secretions are not only de-  
creased, but the blood supply of the air  
passages becomes relatively super-  
abundant, congested and sluggish, and  
the beginning of the end is evident  
enough.

Persons who are luckily unaccus-  
tomed to these high temperatures often  
experience a sense of oppression from  
the same cause. It is the protest of  
healthy resistance against artificial en-  
feeblement. Foreigners say with truth  
that Americans literally bake them-  
selves in their houses, and there is in  
this connection also much reason for  
their opinion as to the cause of the  
American catarrh.—Medical Record.

Never is time more precious than when some  
member of the family is attacked by colic, dysen-  
tery or any bowel trouble. The doctor is distant,  
but if Perry Davis' Painkiller is near all danger is  
soon ended.

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A Prune Catcher.

A. C. Bryant, of Calistoga, Napa county, has invented what is called a self-dumping prune sheet, which the San Jose Herald says is designed to save growers the annual loss which results from the prunes dropping before they are ripe for picking. Numberless are the plans which have been devised to avoid this loss and preserve the fruit, but all the methods heretofore suggested have been rejected because they involved too great an amount of either time or labor. One of these plans was to spread sheets of canvas around the tree, beneath the fruit laden branches, and shake the limbs, thus dislodging the loose fruit, which fell into the sheets upon the ground.

This method gave satisfaction in small orchards, where all the trees might be subjected to this treatment every few days up to the time when the trees were finally stripped of their product by hand. But in the larger orchards it was too laborious to be practicable, and the dropping of prunes has become a feature of the season which these growers have come to regard with indifference.

The invention of Mr. Bryant is based upon the use of the canvas sheets, and the improvements on the original are so slight and simple that it is difficult to imagine why they were not adopted long ago. His apparatus consists of two canvas sheets, 15 feet in length and 7 in width, stretched on an oblong wooden frame, the sheet being allowed to bag somewhat in the center. The sheet is mounted in front on a pair of light wheels, and is pushed forward in the same manner as a wheelbarrow. Two men work together, each pushing one of these sheets before him. The frames are placed in position beneath the tree, forming a canvas platform 14 feet square beneath the branches. The tree is shaken lightly and the fruit drops into the sheet. In the center of the canvas is an opening, covered by a slide, and immediately beneath is a box, which is held in place by hooks, which permit of it being instantly removed when filled, and another substituted.

The prunes congregate in the center of the sheet, and the operator pulls a cord which controls the slide, and the prunes are allowed to fall through the opening into the box beneath. By another pull of the string the slide is replaced over the opening, and the operators push on to the next tree, where the performance is repeated.

Mr. Bryant claims that it is possible, with a pair of these sheets, to secure nearly the entire crop of prunes in a 40-acre orchard, which may be gone over, if necessary, every four days.

A Fake Land Buyer.

Some time ago a man went to C. M. Lumereau's, wanting to purchase a stock ranch. The gentleman looked around, concluded Mr. Lumereau's place just suited, and in the meantime was treated to the best. The price was asked, which was all right, but the wife in Fresno had to be heard from, so he lingered three days, looking impatiently for an answer. None came, so in the meanwhile he decided he would go and stay with Will Ogden.

So to Will Ogden's he went and bartered for his place—Lumereau's was too large. Another letter was written to the wife, but no answer came. Oh, the worry; some one must be taking his letters out. A week passed; he wanted clean linen; borrowed from Will; would soon pay back. So with plenty of tobacco smoke and good yarns to spin, another week went by quickly.

One morning he thought he would take a ride, and landed at Arthur Carpenter's neat little home at Poplar. He was given the best the house afforded. He dickered for his place, as it just suited, and wanted to know when he could be given possession, as he wanted it soon, as he was very much pleased with the place. Later he took another skip, and the last heard from he was making his way toward Tipton, and perhaps now is beating his way on the railroad to other parts. He is a clever fake.—Porterville Enterprise.

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## THE VETERINARIAN.

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## MAD ITCH.

TO THE EDITOR:—I have just had a very fine Jersey cow taken with a severe itch at the root of tail; in six hours it seemed all over the cow's body and in twelve hours the cow was dead. Can you name this disease and a remedy for same? —C. & W., Monticello.

Your cow probably had what is called mad itch. There are many causes, but the most common is derangement of the digestive tract. It may have been from impaction of the manplies, or third stomach. It is sometimes seen in dysentery. Eating irritating poisonous weeds may cause it. In such severe cases treatment would be of little use. In mild cases a change of feed and laxative medicine would help. An external application of borax or baking soda, four ounces in quart of water; or carbolic acid, one tablespoonful in quart of water, would give relief.

## POOR CONDITION—PIN WORMS.

TO THE EDITOR:—I have a mare that keeps poor in flesh and has a slight yellowish crust adhering under the tail. Is it a sign of worms? What is a good remedy? —H. H. CARLTON, Napa.

Take your mare to a reliable surgeon and have her teeth examined. They may be sharp and irregular, causing the poor condition. The yellowish crust is a sign of pin worms. They are best gotten rid of by rectal injections. Creolin, two tablespoonfuls in two quarts of water, injected with a large syringe or rubber tube and tin funnel every three days will help rid the mare of the worms.

## HEART OR DIAPHRAGM TROUBLE.

TO THE EDITOR:—I have a valuable horse about three years old which was overworked by a careless person. The horse was not accustomed to work, but was hitched up with an older horse on a plow and worked about two hours, and when discovered he had what is called the "thumps." You could hear his heart beat several rods away. The horse has not been well since, has no appetite and is very restless while standing. His knee joints are very much swollen. Kindly inform me what can be done for the horse. Will he ever get over it? —L. L. CROCKER, Loomis, Cal.

Your horse had either palpitation of the heart or spasms of the diaphragm caused by the overexertion when not in condition. In the former disease the pulse is felt at the same time as the thumps are seen. With the latter the pulse is not always at the same time. The pulse is taken from the artery passing under the edge of the lower jaw. It is not strange that the horse has been unwell since. The treatment would necessarily vary so much in either case that you had better consult a good veterinarian if possible. Allow the animal a paddock or pasture and no work for some time. Then begin with gentle work.

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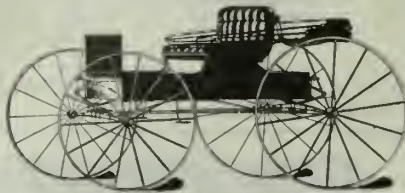
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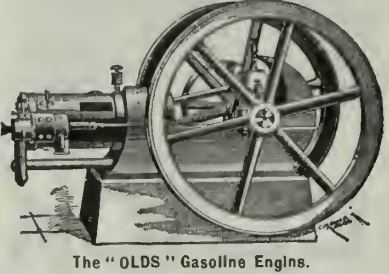
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## Farm Insurance Organization.

To THE EDITOR:—You recently printed an address by F. E. Kellogg delivered before our farmers who proposed to organize an insurance company. I will give the result of our meeting: About 140 farmers met and confirmed the earlier proceedings and elected the following directors of the Santa Barbara County Mutual Insurance Co.: H. A. Nelson, Charles Brocklesby, Frank Kellogg, G. C. Packard, Galen Smith, E. F. Baker and J. M. Armstrong. After adopting a set of by-laws the board elected the following officers: President, H. A. Nelson; vice-president, Charles Brocklesby; secretary, Frank Kellogg; treasurer, G. C. Packard; and ordered the secretary to procure the proper books and blanks to commence business. I should be glad to see a note of the organization in so valuable a paper as the PACIFIC RURAL PRESS if you can find room for it.

Montecito. G. C. PACKARD.

This item will be interesting in many communities where similar organizations are in progress.

## New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

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- 696,701.—DRIVING GEAR—C. F. Allen, Hueneme, Cal.  
 696,533.—WINKER STAY FASTENER—A. L. Archambault, Stockton, Cal.  
 696,497.—THILL COUPLING—Bishop & Toline, San Jose, Cal.  
 696,542.—BROOM HOLDER—H. Blome, Oakland, Cal.  
 696,548.—ASSAYING FURNACE—A. O. Calkins, Los Angeles, Cal.  
 696,857.—COOKING STOVE—E. Clarke, Seattle, Wash.  
 696,858.—BEDSTEAD—S. F. Claussen, Walla Walla, Wash.  
 696,557.—CASH LOCK—F. George, Valona, Cal.  
 696,561.—DRESS SKIRT LIFTER—J. & K. M. Hammer, Tacoma, Wash.  
 696,636.—SPLIT PULLEY—A. W. Hight, Ballard, Wash.  
 696,817.—TURNING DEVICE—G. H. Hildreth, Seattle, Wash.  
 696,568.—BRACKET—E. F. Kaiser, Fresno, Cal.  
 696,569.—GAS GENERATOR—J. S. Killian, Elmonte, Cal.  
 696,875.—BICYCLE TIRE—R. L. Lewis, S. F.  
 696,652.—DENTAL OTTOMAN—A. F. Merriman, Jr., Oakland, Cal.  
 696,591.—OIL BURNER—C. W. Poole, San Jose, Cal.  
 696,655.—PUMP BALANCE—F. Ray, S. F.  
 696,598.—WEIGHING MACHINE—G. F. W. Schultze, Berkeley, Cal.  
 696,599.—WATER HEATER—Shoenberg & Levy, S. F.  
 696,600.—CAMERA—H. L. Silver, Los Angeles, Cal.  
 696,697.—HARROW JACK—N. W. Thompson, Bigelow, Or.  
 696,700.—VEHICLE TIRE—F. Tiltman, S. F.  
 35,837.—DESIGN—C. E. Larrabee, Oakland, Cal.

LAW GOES HAND IN HAND WITH CHICKEN RAISING.—Santa Rosa Press-Democrat: Superior Judge Carroll Cook of San Francisco, who owns a country home and ranch near Glen Ellen, has lately devoted a little time to a study of poultry raising on the side. Consequently he has started in as a chicken raiser. Already the Judge's reserve stock numbers some 400 chickens. The incubators are running full blast and soon the poultry yard will be well stocked and the market well supplied with the products from the lawyer-farmer's establishment. The Judge likes rural life. Considerable fruit is raised on his ranch, as well as cattle and hogs, and he also has some timber land.

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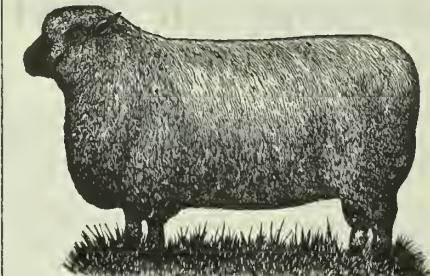
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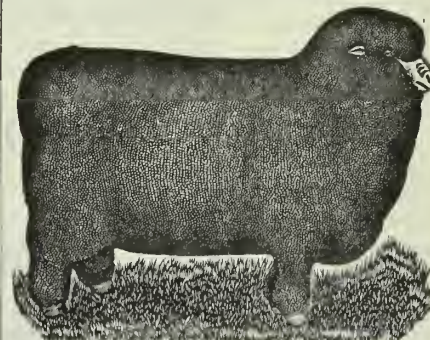


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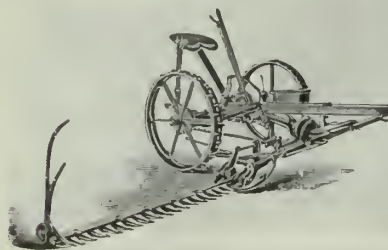
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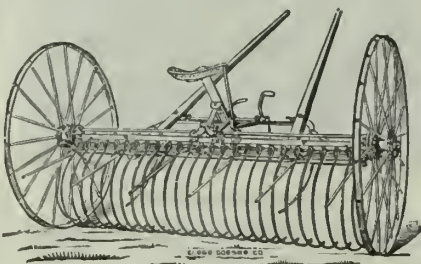
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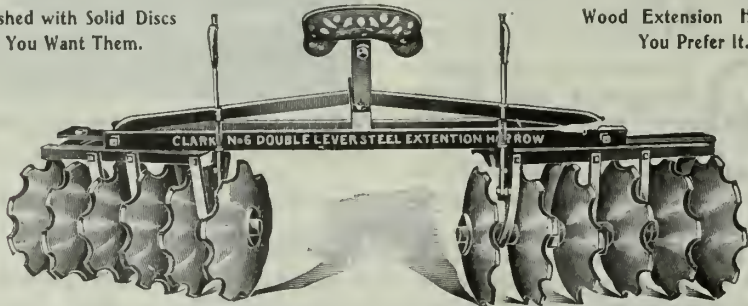
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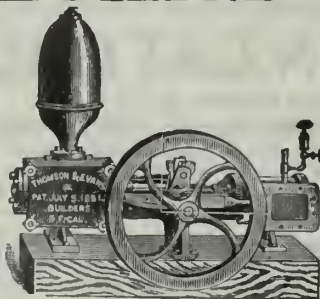
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# THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 17.

SAN FRANCISCO, SATURDAY, APRIL 26, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

## A Ship of the Desert.

The idea of a ship of the desert has been so long a figure of speech—the weaving of romance and imagination about the dromedary and his navigator, the nomadic Arab of the Sahara—that the real thing depicted in the illustration accompanying this, though a thing of beauty, will bring to the mind a sense of regret at an illusion that must vanish. To one who knows from close association both the real ugly beast of a camel with his unpleasant master, and the graceful machine here pictured, the disillusionizing process leaves no disappointment.

Like many other unbelievable things, both natural and the development of art, this novel structure is a California production. It sails on the Mohave desert. This desert, too, is as unlike the thing created by one's imagination as are most things Californian. It has a river—the Mohave—which is being harnessed to water wheels to make power and light—which could very appropriately be called "The Light of the Desert"—and, after making power and light, used for irrigation, makes the sands fruitful of oranges and pomegranates. This Mohave desert has a covering of snow in California's pretense for winter; a carpeting of flowers, to the vivid bloom of which distance gives the effect of a field aflame, in spring time. It is noisy at times with the twittering of birds, and every desert bush hides a mouse or a rabbit. Still, with these desert surprises and antithesis, it has in a long dry summer of mirages, horned toads and rattlesnakes, and summer is not the season for pleasure journeys on the desert.

The Mohave desert has a wealth in mines, lightly touched as yet, and still to be found by that mining pioneer, the prospector. The new ship of the desert is really a mining apparatus devised to be labor-saving and more economical than the burro that it is expected to displace for transportation. The new ship of the desert has the wind for motive power, where the burro must be fed and provided with a water supply, always short and never convenient. Two tenderfoot miners, the Hoyt brothers, of Cleve-

land, Ohio, brought the idea out with them—doubtless getting it from the ice boats used back there in the winter navigation of Lake Erie—and built it at their new home at Rosamond, Kern county, to carry them back and forth daily to their mine, 9 miles away, a service it performs without the "bucking" that attends on continuous service from the burro.

The illustration shows the manner of construction employed. This one is 14 feet long, with 8 feet beam at the bows, tapering to a sharp run aft. The mast is 15 feet high from the front axle to the truck. The main boom is 10 feet long and the mainsail has a

little ash-colored desert chipmunks scatter the sands about in their frenzied haste to get into their retreats; an occasional coyote, long and gray—the picture of starved want—rises upon his scraggy hind legs and sniffs; now and then the wheels pass over a deadly rattlesnake; it speeds by the bleaching bones of some poor creature, human or otherwise, that has suffered the horrors of starvation.

The moonlight excursions on the "Queen" are said to be the rarest of sports. There is something uncanny about the singular craft, shooting noiselessly through the moonlight, like a white-sheeted specter. When

it was first put in service, stray travelers who met it were frightened almost out of their wits. The Piute Indians were panic-stricken. With wild whoops of alarm they made a rush to get away, the braves trampling the squaws and papooses under foot. Their food was thrown away; and when the strange white monster had gone, the terror-stricken natives prayed throughout the night.

THE Visalia Fruit & Land Company has decided to resort to petroleum as a safeguard against frost. This company has 440 acres planted. Experiments have been conducted in burning a mixture of crude petroleum and planing mill waste.



Copyright, 1902, by John L. Von Blon, Los Angeles.

A Ship of the Desert—"The Desert Queen"—A New Means of Transportation on the Mohave.

hoist of 10 feet in the throat. Perhaps it should be explained that, though the desert ship holds water, which it carries, it is not the throat of the mainsail which gets dry.

The first of the kind, it is, like all beginning, small and made from the materials at hand. The wheels would run easier with ball bearings; but, even without this, the speed developed seems all that is desirable. The winds blow strong on the desert and lift the boat along with the speed of a California railroad train. The vessel is a good load carrier, as the number of passengers shown in the illustration will indicate.

Those who have ridden on the Desert Queen claim it to be the most exciting of experiences. As it goes bounding along, horned toads scurry away over the hot sands; lizards, like blue streaks, dart for shelter;

This made a dense smudge and at the same time there was developed plenty of heat. This mixture is made of such a consistency as to admit of its being handled readily with a shovel. A good-sized shovelful is placed in the center of each square of four trees—in the case of the Visalia Fruit & Land Company eighty to the acre. On the approach of a dangerously low temperature these heaps are promptly fired. While waiting to be used each heap is covered with an empty fruit box, placed bottom up. The planing mill refuse, or waste, consists of small-sized thin chips. As prepared for firing, the estimated cost per pile is less than one cent. The experiments are being conducted by Prof. George A. Merrill of the California School of Mechanical Arts. One of the series calls for 13,000 gallons of crude oil petroleum and a proportionate amount of mill waste.



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DEWEY PUBLISHING CO. Publishers

E. J. WICKSON. Horticultural Editor

San Francisco, April 26, 1902.

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## The Week.

Everything is still favoring crops. Showers have fallen in all parts of the State. The extreme south has been especially favored and has enjoyed heavy showers directly from its own weather reservoir—the adjacent ocean. Though fruit prospects generally are good and frosts have been light and infrequent, too much attention should not be paid to the too highly colored reports which are usual at this time of the year. The apricot and almond crops are evidently not to be excessive, and with other fruits there are too many dangers still in the way to warrant estimates. Low prices should not be taken on the basis of excessive crops this year.

Wheat has risen again and it should hold fast this time. The advance in futures is about 50c per ton and spot is possibly half that higher on shipping, though very little is being done. Five cargoes have cleared, one straight of each wheat and barley and three mixed. A shipment of 800 tons of Chevalier has gone to Australia. Barley prices are unchanged: the feeling on feed is a little easier. Oats are also easier on the higher grades. Corn is steady and unchanged. Beans are the same as before and still in suspense. Bran is stiffly held but there is little selling. Hay is a little easier on the highest priced goods. Beef and mutton are unchanged, but prices are well maintained: hogs are a little higher for all kinds except extra large and extra small. Butter is firm and cheese is quiet and easy. Eggs are firm, in good demand, and largely bought previous to arrival at close to city figures. Poultry is rather weaker; heavy arrivals of Eastern have come in, and this cuts into all but the choicest Californian. Potatoes are still holding value—choice being in full demand at outside figures. Onions are moderately firm, with slight upward tendency for the best. Asparagus comes in freely and sells well. Peas and rhubarb are plentiful and lower. Berries are increasing in quantity and selling well, if ripe and clean. Apples from cold storage are being quoted up a little. Oranges are in larger supply and the market in the main easier, though fine medium-sized Navels are bringing close to last week's figures. There is no change in lemons; all but the very best are weak. Limes are abundant, but unchanged. Good jobbing trade in dried fruits, but prices are about the same as before. Nuts are firm and offerings small. Honey is quiet and easy at unchanged prices. Hops are jobbing at old figures. Wool is still being taken rapidly in the country and little doing in the city. Buyers are chasing the product.

Now that we have the true Jordan almond through the Bureau of Plant Industry at Washington, if we did not have it before, the popularity of that variety in this country becomes of great moment. Consul B. H. Ridgely at Malaga writes to the State Department that last year's product of Jordans at that point is virtually exhausted. There are, perhaps, a few hundred boxes still to be had, but it would be impossible for any exporter to fill a large order for bona fide Jordans. The crop of 1901 amounted to about 80,000 boxes, and these have been virtually all marketed in the United States and London at prices ranging from \$6.50 to \$8.25 per box of twenty-five pounds. Consul Ridgely says that the prices of Jordans for the past two years have been higher than ever before known, and, "unless California succeeds in producing these almonds, there is no reason to believe that the prices will fall, as the demand is always steady." California will see about that later. Our Spanish friends can, however, console themselves that it will take California a few years to find where she stands with this variety and to produce any influential amount, even if the fullest adaptation to the variety should be shown.

The hair keeps raising on that coyote scalp issue, though there is a prospect that it may soon be smoothed down forever. We alluded recently to the fact that it would soon come up before the Court of Claims at Sacramento. A prominent Sacramento attorney is credited with the statement that the trial will soon be held. The claims of no less than 2337 persons placed in the hands of Wells, Fargo & Co. and of the D. O. Mills Bank have been incorporated in the complaint. It therefore contains 2337 causes of action and is one of the most voluminous ever filed in a California court. The attorney who drew it worked upon it eight months. In 1891 the Legislature authorized this \$5 bounty. In a year and a half such gigantic frauds had developed that the State refused to pay any longer. In 1895 the bounty law was repealed. There were then claims pending to the amount of \$286,000. At its last session the Legislature authorized suit against the State upon these claims. The trial will be watched with great interest and should the big suit prove successful others will be instituted.

One of the wheat ships clearing this week took for Liverpool thirty-four cases of California pampas plumes, with a valuation of \$1360. When we first saw the statement we supposed King Edward had shown the good sense to use this showy California product for decorations at his coronation. A wheat ship is, however, too slow to get them there in time. No doubt if the California growers had thought of it in time there would have been a California pampas plume overtopping every lamp post in London during coronation week. Perhaps this shipment may arrive in time to decorate for the returning soldiers from South Africa.

The final issue as to the life of the California Cured Fruit Association is approaching. It is announced from San Jose that President Woods has named May 20, 1902, as the date of the nominating convention to be held in San Jose. At that time officers will be nominated for the Association for the ensuing year. The annual meeting at which the election will occur is called for June 4, 1902. Notices to this effect are being mailed to all the members. President Woods has stated that about \$340,000 more will be paid the growers. Of this amount, \$300,000 will be on the crop of 1900. It will go out in two dividends, \$200,000 to be paid about May 1 and the balance as soon as the money is received. There is about \$40,000 to be paid to growers on the crop of 1901. President Woods states that the cost of running the Association for two years will be about \$11 per ton of dried fruit.

Speaking about alkali, it is a sad fact that the evil is cropping out in many of the newer regions which are resorting to development by irrigation. Director R. H. Forbes of the Arizona Experiment Station has just issued a popular bulletin warning Arizona fruit growers of the danger. He shows that in hot weather, at a time of low water, through evaporation and the presence of seepage from irrigated districts above, Salt river becomes strongly charged with soluble salts. During the week ending August 4, 1900, for instance, the water averaged 157 parts

of soluble salts in 100,000 of water, which is a dangerously saline irrigating water. For the period from June 1 to August 4, 1900, the average was 139 parts in 100,000. One acre-foot of such water contains about 3780 pounds of salts. When it is remembered that some of the more sensitive crops and fruit trees are killed by less than 10,000 pounds of salts in the upper 4 feet of soil, it is seen that these low, concentrated river waters are to be taken seriously. Moreover, these summer waters are scant in quantity, and, especially in the orchard practice of southern Arizona, are rushed hurriedly through shallow furrows over the area to be irrigated, wetting only the surface layers of soil. Under such conditions, uncultivated tree rows and ridges and insufficiently cultivated surfaces in general lose by evaporation a large part of the water applied in irrigating. But the alkali follows the soil water in its movements either up or down. As the soil water, through capillary action, comes to the surface and evaporates, the soluble salts are left at or near the top of the ground. But a shallow wetting of the soil also leads to the development of tree and plant roots near the surface, for plant roots also must develop best where requisite amounts of water are accessible. As a result of shallow irrigation and insufficient cultivation, therefore, the orange orchards (which were more particularly studied) were found with root systems, in considerable part, developed within a foot of the surface, in direct contact with accumulated alkali salts left by evaporation.

One of the city papers has sharply arraigned the local dairy exchange because of quotations alleged to be below the market. The PACIFIC RURAL PRESS looks on calmly at the issue, which is largely between the city dailies. Our quotations are arrived at by the most careful inquiry and observation by our own reporter, and are not the work of any exchange or organization. All sources of information are looked into, and the truest possible conclusions are set forth in our reports.

## QUERIES AND REPLIES.

### Sidehill Farming.

TO THE EDITOR:—Will you or some of your subscribers write a good article on the subject of sidehill farming? I should be pleased to have as much said upon the subject as could be put in a long article, and among others the following points dealt with: What are the best implements for sidehill work? Is it necessary to always plow down hill; that is, turn the furrow down hill with a sidehill plow? Which gives least labor, vines or trees? Would you put trees far apart on a sidehill so as to grow other crops in between? Does a sidehill with an east front ripen a crop earlier than one with a west front? etc., etc. Is there a book that deals with this subject.—G. A., Marin county.

The suggestion is a good one and we would be glad to have it discussed. Hillside policies are peculiar, and only a sidehiller can properly discuss them. We shall be pleased to have a free contribution of experience.

### Twig Boring Beetles and Pear Blight.

TO THE EDITOR:—I am sending you specimens of pear blight, which is prevalent in this section of the valley and threatens the entire destruction of the pear industry. I also enclose some of the insects which we think are responsible for the damage. The blight strikes the blossom or pear first and then works down the wood. If you can give me any information in regard to the blight or insect it will be a great favor.—SUBSCRIBER, Fresno.

Your specimens show that you have two different things to deal with. The boring beetle which you send is well known in California and its name is Polycaon confertus. It bores into the twigs and branches of nearly all kinds of fruit trees. It is a native California insect and has made its way from the wild shrubs to the cultivated growths. It has probably no relation to the blight, although, as in your case, the two destructive agencies may be working on the tree at the same time. The beetle could carry the blight if it went from tree to tree, but it is found in a burrow at the base of a twig while the twig is blighted at its tip, above the point where the beetle is at work. Blight is also abundant on trees where this insect is not found.

Your specimens also show the bacterial blight of the pear, which is now a very serious menace to the



life of the trees in the San Joaquin valley. We presume you are aware of the cause and methods of the disease which have been so fully discussed during the last year. The PACIFIC RURAL PRESS has given full expositions of the trouble by both California and Eastern investigators. It only remains to acknowledge that no satisfactory remedy or treatment has yet been proposed. The bacteria commonly find entrance to the interior tissues of the tree and are out of the reach of any germicidal spraying. All that can be suggested is cutting back into healthy wood all affected branches and twigs, with the idea of arresting the progress of the disease in that way. It should be the rule with the pruning shears and the saw never to cut into wood that is blighted, but always healthy wood below. Tools used on the blighted wood will quickly communicate the disease to new tissue. This is not a satisfactory treatment, because the disease spreads in spite of it. It is only apparently postponing the inevitable result, and that is the death and destruction of the tree, unless investigations now in progress disclose something more effective.

Mason Bee Work.

To THE EDITOR:—Will you kindly inform me of the nature and cause of the deposit on the plum twig mailed you to-day? I have cut many similar ones from peach trees this spring, always finding them in the crotches of small branches in the top of the trees, as this was. They appear to be a mixture of gum from the tree and fine gravel, but how does the gravel get there?—J. H. BARBER, Jackson.

The peculiar structure of gum and fine gravel is made by the mason bee, a species so called from the way in which it uses small stone in its construction. This construction is made for the protection of its own offspring, the pupa of which we find on tearing to pieces the protecting covering. In this case there is added interest, because on opening the case, which should contain the pupa of a bee, four small pupæ are found. These are the resting stage of parasites which destroy their host, and are now waiting for favorable opportunity to emerge as flies to find more bee pupæ in which to deposit their eggs in turn. With such an abundance of parasitic enemies, it is not likely that your mason bees will multiply to any troublesome extent.

Late Ripening Prunes.

To THE EDITOR:—Can you give me any information if the prune growing season can be shortened? They ripen about October and the weather is then damp and cloudy. They irrigate two or three times—if the orchard were irrigated early once, then cultivated well, would not that help? The trees are very vigorous and thrifty and French and Italian. This is my first season in the valley.—INQUIRER, Sunny-side, Wash.

The probability is that your trouble is due to a slow summer climate which has not heat enough to hasten maturity. Of course, excessive irrigation will postpone ripening a little, but not enough to cause the lateness which you object to. One good irrigation followed by thorough irrigation will carry the tree through fruiting if the soil is deep and retentive, but not if it is shallow or coarse. Which system of irrigation is best for your trees or your soil can only be determined by experiment and careful observation of the size of the fruit and thrift of the trees. You can probably avoid your difficulty by grafting over the trees into the Sugar prune, which in California ripens nearly a month earlier than those you have.

Plants for Terrace Banks.

To THE EDITOR:—Can you give some advice as to the best plant or seed to use, to cover the front of terraces located at Colfax, Placer county, California. These terraces (about fifteen acres), planted in Bartlett pears, are about 8 feet wide and 3 to 4 feet in height, and it is this 3 to 4 feet which I desire to cover with vegetable growth, whose roots I expect will give more strength and permanency to the terraces. The soil is decomposed granite, dry and not very fertile on the surface. A flowering plant called Portulaca has been suggested.—READER, Placer county.

It is an exceedingly difficult matter to accomplish what you desire with the exposed faces of those terraces. The Portulaca is well adapted for the purpose where you have a moist climate to deal with, but in California it would be almost impossible to keep this plant alive during the dry season even by most assiduous watering. The plant that would be most likely to maintain itself on the terrace would be

Bermuda grass, but it would not be content to remain there, but would soon cover the whole place and is almost impossible to get it out of cultivated ground. We know of no way of covering terraces, except by resorting to the continual trouble and expense of making lawns of them, by the use of grasses like Australian rye grass, or Kentucky blue grass, and this would be quite satisfactory and handsome if they were continually watered and mown, but in the dry air and high heat of the summer in the foothills they would require almost daily sprinkling and regular mowing. From an economical point of view, of course, such plants are out of consideration. We have frankly to acknowledge that we know nothing that will answer your request without an expenditure of time and labor which would be out of consideration, unless you wish the terraces to serve an ornamental purpose, regardless of cost.

Failure of Tomatoes to Set Fruit.

To THE EDITOR:—Can you tell me the cause of blossoms falling from tomato vines? The blossoms all fall off, and people around this section of country find it almost impossible to raise tomatoes. Is there anything one can do to prevent this?—GROWER, San Rafael.

Tomato blossoms fail to set because the plants are growing too rankly. Excessive vegetative vigor is at enmity with fruiting. This trouble is usually worst early in the season, because moisture is apt to be so abundant that the plants revel in new growth. Later in the season, as moisture decreases, this growth will be checked and blossoms will set. Over-irrigated tomatoes may fail to fruit because this rank growth is continued. If you want abundant fruit do not let your tomato plants have too good a time—just keep them growing slowly and strongly, not rankly.

Orange Rot.

To THE EDITOR:—I enclose a small section of a Washington Navel showing a peculiar dark green substance close to the skin. The orange looked sound when I pulled it. Will you kindly inform me what it is and whether, in your judgment, it is a form of disease that is likely to damage our trees, or merely a foreign substance that has found its way into the fruit through the blossoming period?—E. I. GALVIN, Sacramento.

It is a case of the occurrence of orange rot in the navel region of the orange and is due to the intrusion of blue mold through the navel to the adjacent interior of the fruit. Often the exterior appearance does not disclose this internal condition. The cause and occurrence of this evil was fully described and illustrated in the PACIFIC RURAL PRESS of March 1st on the basis of investigation by Prof. C. W. Woodworth of the State University.

Salt Land for Asparagus.

To THE EDITOR:—I am informed that a tract of dry tule land would make very good asparagus land, and that land used for this purpose requires a certain amount of salt. Is it true?—READER, Contra Costa county.

Salt has always been used as a special fertilizer for asparagus on ordinary soils because the plant is native to saline soils. In California at the present time very large products of asparagus are being secured on reclaimed tule lands along the Sacramento and San Joaquin rivers, and large asparagus canneries are located there. These light soils afford exceptional opportunity for the breaking through of magnificent shoots, and their moderate saline content is an advantage. How far this experience can be applied to other salt lands depends upon the percentage of salt present. If the land will grow beets, it will do for asparagus. How much more salt asparagus can stand you will have to determine by experiment upon any particular piece of land you have in mind.

Ramie and Silk.

To THE EDITOR:—Please inform me where ramie plants, or the seeds of the plant, can be procured; also where to send for the eggs of the silk worm.—F. ANTHONY, Cupertino.

The two things you mention have proved so disappointing industrially that they have gone out of the trade. Ramie plants are scattered around the State here and there, where people have been induced to plant them by the prospect of demonstration of satisfactory processes for preparing the fiber. This ex-

perimental work is still going on, new machines being brought to light each year and yet no commercial demonstration has yet been reached. If you could find one of these patches of ramie the grower would probably be glad to have you take the plants off the place, and yet this industry may ere long be placed upon a good foundation, though people who started growing the plants ten years ago have become heart-sick through hope deferred. The silk industry is much in the same form and most experimenters have abandoned it. Mrs. Carrie Williams, of San Diego, has retained confidence longer than others and can supply eggs to those who desire them.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending April 21, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Warm weather has continued during the week and light rain has fallen in all sections. Grain and hay have made good growth and prospects continue excellent for unusually heavy crops. Barley is heading out in Tehama county and gives promise of a very large yield. Green feed is abundant and stock are in good condition. Almonds and apricots are of large size in Yolo county. There will be a large yield of all deciduous fruits, except apricots, which will probably be below average. Orange trees are in bloom in Tehama county and other places. Olive trees are also in bloom and give indications of a good yield. "Measuring worms" are causing some damage to cherry, apricot and prune trees near Vacaville and orchardists are fighting the pest with tangle-foot flypaper around the base of the trees.

COAST AND BAY SECTIONS.

The weather has continued warm and cloudy or foggy during the week, with light rains in all sections Saturday night and Sunday. The showers have been very beneficial, except in the southern districts, and all crops have made rapid growth. Prospects are still good for excellent crops of wheat, barley and oats, though there are some reports of a short yield in portions of San Benito county. Hay is in excellent condition and a heavy crop is expected; haying is progressing in some places. All varieties of deciduous fruit trees have blossomed and in some places are so heavily laden with young fruit that thinning will be necessary. Unusually heavy crops are expected.

SAN JOAQUIN VALLEY.

The continued warm weather has been beneficial to all growing crops. Strong northerly winds during the first of the week dried out the soil to some extent, but generous showers Saturday night and Sunday have again softened the ground and will cause rapid growth of grain and grass. Grain continues in good condition, though a little backward in some places, and a large yield is predicted in nearly all the northern districts, with a fair yield in the south. Barley and oats are heading out rapidly. Deciduous fruits have not been injured by frost this season and give promise of a heavy yield. Vineyards are in good condition.

SOUTHERN CALIFORNIA.

Generous showers at the close of the week have been of great benefit to all crops. The rain extended to all sections, varying from 0.30 inch at San Diego to over 1 inch in the mountain districts. Warm, clear weather prevailed during the first of the week, followed by cloudy weather and fogs along the coast. Grain and hay are in good condition. A correspondent at Los Angeles estimates that the wheat crop will be up to average and hay and barley crops better than for several years. Haying has commenced in some places. Apricots are not doing well; but other deciduous fruits are in good condition and large crops are expected. Citrus fruits are in full bloom in some sections.

LOS ANGELES SUMMARY.—Generally good growing week; cloud and fog benefited beets and growing crops, but rain needed soon for late grain and hay. Some hay being cut. Trees full of bloom and setting well.

EUREKA SUMMARY.—Crops growing rapidly. A heavy yield of fruit assured. Owing to cold, rainy weather during March, the growth of fall grain was greatly retarded and consequently is not looking well.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, April 23, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	1.18	47.61	44.69	39.15	58	40
Red Bluff.....	.08	29.81	22.68	22.82	76	42
Sacramento.....	.7	16.32	17.50	22.08	76	42
San Francisco.....	.04	17.40	18.99	23.85	58	46
Fresno.....	.02	6.48	10.39	12.36	84	40
Independence.....	.06	4.29	5.81	5.35	82	32
San Luis Obispo.....	.16	21.33	27.87	16.71	70	38
Los Angeles.....	.04	10.52	14.18	16.85	68	44
San Diego.....	.20	6.11	10.66	7.41	64	48
Yuma.....	.00	.68	3.60	2.84	96	44



## TRACK AND FARM.

### The Export Horse and Mule Trade of the United States.

Not many years ago, says the Crop Reporter, published by the Division of Statistics of the United States Department of Agriculture, the impression was quite prevalent throughout the civilized world that an era was approaching when the usefulness of the horse would be greatly curtailed. Extremists went so far even as to forecast a "horseless age." That there were grounds for these predictions, inasmuch as other motive forces were at that time rapidly supplanting animal power, is obvious. In cities the traction power formerly supplied entirely by horses was giving way, first, to the cable car, and, later, to the electric street railway. Afterwards the bicycle and then the automobile gave promise that the application of the principles embodied in these inventions might entirely eliminate the horse from many other phases of urban life. In the country, too, the portable engine, the steam plow, and many economies in the use of animal power suggested the probability of the eventual substitution of mechanical power, to a large extent, for horse power on the farm.

It is apparent now that these gloomy predictions as to the future utility of the horse fell short of fulfillment, having been made on the very eve of a period when Great Britain would have to pay one of the largest bills for horse supplies that was ever paid for such supplies by any nation at any time in the world's history, and when both the horse and mule trade of the United States with foreign countries was to assume a magnitude unprecedented in the history of this republic.

**THE UPWARD MOVEMENT.**—The present activity, however, of the foreign trade of the United States in horses and mules really dates back to the panic of 1893. The low prices, largely the result of the panic, at which good horses might then be had in this country doubtless had much to do with attracting the attention of foreign buyers to the exceptional advantages of the United States as a source of horse supplies. The result was immediately reflected in the export trade. Exports of horses and mules combined, which in 1893 had amounted to only 4601 head, valued at less than a million dollars, increased by leaps and bounds until in 1898 they reached the total of 59,248 head, worth \$6,841,358. In the following year the outbreak of the war in South Africa gave an additional impetus to this trade in all exporting countries, especially in the United States, Mexico, Argentina and Australasia. Exports from the United States quickly responded to the increased demand, and in the fiscal year ending June 30, 1900, they amounted to a total of 108,091 head, horses and mules combined, valued at \$11,532,094. In the succeeding fiscal year they increased further to the high record mark of 116,655 head, with a value of \$12,089,112.

**EXPORT HORSES.**—The statistics of the foreign trade of the United States in horses, stated separately, present some very interesting features. The trade naturally divides itself into two periods, the line of demarcation being the year 1894. The first period, extending from 1884, when horses were first separately specified in statements of imports, up to 1894, is characterized by a heavy, though declining, excess of imports over exports, the imports for the entire period averaging annually 42,318 head, against average annual exports of only 2670 head. The second period, extending from 1895 up to the present time, is, on the contrary, notable for a phenomenal excess of exports over imports, the average annual exports amounting for the period to 46,077 head, against average annual imports of only 6157. The following statement shows the exports and imports of horses separately for the full period for which figures on imports are available:

#### UNITED STATES EXPORTS AND IMPORTS OF HORSES.

Year ending June 30.	No.	Value.	No.	Value.
1884.....	2,721	\$ 424,317	45,610	\$3,726,534
1885.....	1,947	377,692	39,985	3,292,298
1886.....	1,616	348,323	58,903	4,312,576
1887.....	1,611	351,607	56,395	4,872,982
1888.....	2,263	412,744	62,401	5,405,873
1889.....	3,748	592,469	58,714	4,868,862
1890.....	3,501	680,410	49,116	4,840,485
1891.....	3,110	784,908	22,537	3,265,254
1892.....	3,226	611,188	14,074	2,455,868
1893.....	2,967	718,607	15,451	2,388,267
1894.....	5,246	1,108,995	6,166	1,319,572
1895.....	13,984	2,209,298	13,098	1,055,191
1896.....	25,126	3,530,703	9,991	662,591
1897.....	39,532	4,769,265	6,998	464,808
1898.....	51,150	6,176,569	3,085	414,899
1899.....	45,778	5,444,342	3,042	551,050
1900.....	64,722	7,612,716	3,102	596,592
1901.....	82,250	8,878,845	3,785	985,738

**EXPORT MULES.**—The foreign trade of the United States in mules is entirely an export one. Previous to 1894 the foreign demand for these animals was not greatly inferior to—in fact, in some years it was in excess of—the foreign demand for United States horses. This trade, like that in horses, began to im-

prove, though not in such heavy proportions, as a result of panic prices, and the recognized value of mules in the army transport service, afterwards, upon the outbreak of the South African war, created an extraordinary demand. The following statement shows the total exports of mules from the United States, and, separately, the total exports of horses and mules combined for each year during the past decade:

#### UNITED STATES EXPORTS OF MULES, AND OF MULES AND HORSES COMBINED.

Year ending June 30.	MULES— No.	Value.	HORSES & MULES— No.	Value.
1892.....	1,965	\$ 238,591	5,191	\$ 849,779
1893.....	1,634	210,278	4,601	928,885
1894.....	2,063	240,961	7,309	1,349,956
1895.....	2,515	186,452	16,499	2,395,750
1896.....	5,918	406,161	31,044	3,936,864
1897.....	7,473	545,331	47,005	5,314,596
1898.....	8,098	664,789	59,248	6,841,358
1899.....	6,755	516,908	52,533	5,961,250
1900.....	43,369	3,919,478	108,091	11,532,094
1901.....	34,405	3,210,267	116,655	12,089,112

**WHERE THE HORSES GO.**—Until the outbreak of the war in South Africa the United States export trade in horses was practically confined to two channels: First, the European trade, monopolized almost entirely by the United Kingdom, Germany and Belgium; and, second, what may be called the North American trade, consisting of exports to countries of the North American continent and its outlying islands. The trade with the rest of the world was unimportant. Until after 1894 the North American trade absorbed the lion's share of our exports. But in the following year an European trade sprang up which increased exports to Europe from 7972 head in 1895 to 37,377 head in 1900, while the North American trade, the bulk of which was with British North America, increased during the same period from only 5850 head to 14,045. During this same period, it is true, exports to all the rest of the world increased from 162 head in 1895 to 13,300 head in 1900, but this heavy increase was due almost entirely to shipments of 10,220 head to South Africa and an initial shipment of 2437 head to the Philippines in the latter year. A more comprehensive idea of the recent development of the United States export trade in horses may probably be obtained from the following statement, which gives separately the exports to Europe, to North American countries and outlying islands, to South Africa, and to all other countries combined from 1894 to 1901:

#### EXPORTS OF HORSES FROM THE UNITED STATES.

Year Ending June 30—	To Europe.	To North America.	To South Africa.	To All Other Countries.
	No.	No.	No.	No.
1894.....	1,452	3,653	0	141
1895.....	7,972	5,850	1	161
1896.....	17,243	7,690	1	192
1897.....	28,488	10,508	1	535
1898.....	37,673	12,989	117	371
1899.....	31,949	12,890	127	812
1900.....	37,377	14,045	10,220	3,080
1901.....	24,488	14,842	37,465	5,455

It is thus seen that the extraordinarily heavy exports of horses from the United States in 1901, amounting as they did to 82,250 head, were due primarily to shipments of 37,465 head to South Africa—a larger number of horses, with one exception, than had ever been consigned up to that time to any single destination in the history of our country. If this factor, however, be entirely eliminated from the trade there is still apparent a remarkable and almost steadily increasing demand in both North American and European countries for horses bred and reared in the United States.

**WHERE MULES GO.**—The export trade of the United States in mules has been confined—with the exception of shipments in recent years to South Africa, to Hawaii, and to the Philippines—almost exclusively to countries and islands on this side of the Atlantic. Previous to 1900, the Central American States, Mexico and the West Indies took annually from 65% to 75% of our entire exports, Mexico and Cuba in the latter years being by all odds the most important customers. In 1900, however, although the trade with Central America, Mexico and the West Indies, as a whole, almost doubled in numbers, the proportion which it formed of the aggregate export trade declined to less than 20%, the decline in proportion being due entirely to shipments in that year of 31,014 head to South Africa, 1260 head to Hawaii, and 1703 head to the Philippines. It is notable that in the following year the total shipments of mules from the United States were 8964 head less than in 1900, whereas exports of horses showed an increase of 17,528 head over the year previous. But from the fact that exports of mules, with reference to countries of destination, have not yet been separately stated in reports of the Treasury Department, the cause of this opposite movement between the trade in mules and that in horses is not apparent.

The activity in both the foreign horse and mule trade of the United States continues up to the present time, the former showing further remarkable increases, the latter some tendency to decline. In the eight months ending February 28 of the fiscal year

1901-02, the total exports of horses amounted to 71,438 head, against 51,856 head for the corresponding months of the previous fiscal year, the exports to South Africa aggregating 46,844 head, against 21,342 head, respectively, for the eight-month periods. Exports of mules for the first eight months of the fiscal year 1901-02 aggregated 20,698 head, against 27,595 head for the corresponding period of the year previous. The total exports of horses and mules for the first eight months of the current fiscal year have amounted to 92,136 head, valued at \$9,098,863.

## THE DAIRY.

### Cement Floors for Dairy Buildings.

No doubt many of our dairy readers will have spare time and funds for improvements of their buildings this summer, and cement floors, if they can be made with the farm help, are not expensive. W. O. Brown, an Ohio farmer, has done much in this line for himself and tells in the Breeders' Gazette how others can do it.

**EXPERIENCE.**—It is now over ten years since I began substituting cement for plank in my stables, and in that time I have used fifty-five barrels of cement on my farm, flooring a horse and cow stable, two hog houses and making a front walk 160 feet long, a portico floor 60 feet long and 5 feet wide, a well platform, and in all these places it has given perfect satisfaction. I believe that it will last 100 years in a stable where sharp-shod horses stand and know that it will endure the lowest temperature without injury. I live on a gravel pike, and so must keep my horses shod the year round; yet the most exposed spots in my stable do not show a particle of wear. We do not find it necessary to put plank over the cement, as a small quantity of bedding will keep the shoes from contact with the floor. Previous to putting in the cement it was necessary to renew the floor every few years, but now it is permanent. What I have said about cement floors means, however, that they are to be made from Portland cement, as the cheap grades will neither endure freezing nor the stamping of heavy sharp-shod horses in fly time.

**CEMENT FOUNDATIONS.**—There is one point that must not be overlooked in the use of cement for new buildings, which is that, if a cement floor is laid, no other foundation will be needed and this saves a heavy expense. I built a hog house two years ago 32 feet long, and it would have required 80 feet of wall for a foundation if I had built a solid wall, which would have cost about as much as the entire floor did; for seven barrels—costing, freight paid, \$20—made the floor, and I set the posts on the floor and had a solid foundation. If I had built a foundation and put a plank floor on it, it would have taken over 500 feet of lumber to make a 2-inch floor, and, in addition, the sills and floor joists would have required between 300 and 400 feet more of lumber, and, at present prices, the lumber would have cost as much as the cement did. Then, when the floor was laid, there would be a breeding place for rats under it, and in less than ten years the floor would have to be renewed. Before that time there would be cracks in the floor through which there would have been loss of corn and liquid manure. Another advantage of cement floors in the stables is that it does not take up a particle of liquid, and as soon as the stable is cleaned the air is pure, while with plank floors there is always an odor from the saturated wood.

**FOR THE COWS.**—In laying a cow-stable floor it is best to always make a manure ditch, as it is the only way to keep the cows clean. The stable should be 10 feet wide from the manger to the rear, which gives 5 feet from manger to ditch, the ditch 2 feet, and a walk 3 feet wide back of the ditch. Make the ditch 8 inches deep and 20 inches wide in the bottom, allowing the sides to slope 2 inches, so that it will be 2 feet wide at the top. It is best to have the door at the end of the ditch, as the cows will always walk to their stalls in the ditch in this case and then step up on the floor. Clean out the ditch every morning and bed it, as well as the floor, enough to absorb the liquid. We make the stalls 4 feet wide, and find that with stalls of this size the cows will lie down comfortably, as they will lie a little angling. There will be no wading in manure to pass behind the cows in milking, and if before milking you scrape down with a hoe any manure that has not fallen into the ditch and scatter about a peck of fine bedding under each cow, you can milk without soiling either feet or pail. I always save fine bedding for the cows, as it keeps them cleaner than straw. We bed with corn chaff when it is to be had, and, as there are two corn shellers within 2 miles, I can get this in all years when the corn crop is good. If we can not get this, we save wheat, oats, or clover chaff or get sawdust. We have a place to store this behind the cows at the left as you enter the stable, where we can put four or five loads. At the rear of the cows is the root cellar, the door being at the end of the milk shelf.

**HOW TO LAY THE FLOORS.**—It is not difficult for any farmer to lay good floors, if the directions here



given are followed. Use in the cow stable 3 inches of concrete and  $\frac{1}{2}$  inch of topping, and in the horse stable 5 inches of concrete and 1 inch of topping. In putting on the concrete lay in strips 3 or 4 feet wide, so as to be able to reach across it to trowel it smooth. If the space where the floor to be laid is deeper than 4 or 6 inches, fill with gravel, cinders or broken stone to that depth; tamp the filling even and solid and you are ready for the concrete. From 8 to 12 parts of gravel, sand and crushed stone can be used to 1 of cement; if gravel alone is used, 8 parts, and if crushed stone can be had, mixed with sharp, coarse sand, 10 or 12 parts can be used. Mix thoroughly; it should be shoveled over dry four or five times, and then sprinkled with water, so as to thoroughly dampen it, and shoveled over three or four times more. You should be sure that every pebble is coated with the cement, as this is necessary to insure its adhering and making a solid stone foundation. You will need to stake up a 2-inch plank for the edge of each section that you lay, but this can be carefully taken up and moved as soon as the section is laid.

The top coating should be put on at once, while the foundation is moist, in order that the two may adhere to each other. This topping coat should be mixed with 2 parts of clean white sand to 1 of cement. We get the best sand for this purpose by screening it from the gravel, and the gravel makes all the better concrete for having some of the sand taken out. In order to be sure that you get the right amount of topping on, use a straight-edge with notches either 1 inch or  $\frac{1}{2}$  inch cut in so it will extend down the depth you wish the top coat to be, thus leaving exactly the space you want for the top coat. After the floor is laid be sure and protect it from dogs, chickens and other animals until it hardens or they will leave tracks in it. It is best in the horse stable, to prevent slipping, to make grooves crosswise of the stalls. This can be done by laying a broom handle in the moist cement and tapping it until it beds half way into the cement. In the cow stable there should be 1 inch of slope from the manger to the manure pit, so that the bedding will not become foul from the urine.

**OTHER HINTS.**—This Portland cement will harden so as to put the horses on it in about ten days, while if the floor is laid with a cheap grade of cement it will be three months before it can be safely used. You will obviate the danger of cracking if you will water the floor twice a day for a week or more after it is laid, as it hardens better when wet than dry, and there is less danger of cracking. In laying a foundation for a building or a walk, it is necessary in order that a good edge may be made that the concrete should be crowded back with a trowel 2 or 3 inches from the plank and pure cement, or with 1 part sand to it, be put in dry. This will absorb water from the concrete and from your subsequent waterings and harden, making a good edge. If this is not done on a hog house floor, where it is elevated somewhat from the ground, there is some danger of the hogs rooting under it, so as to cause trouble by the gravel coming out.

Notice that the essential points for making a good floor are: First, the right kind of material—good Portland cement; second, thorough mixing and tamping of the concrete into the mold or space; third, the thorough tempering of the topping coat and its application at once while the concrete is moist; fourth, the protection from animals, and watering during the drying period. If stalls are to be made, blocks may be placed where the foot of the studding will come and carefully taken out after the cement is dried, which will leave a mortise in which to set the foot of the partitions.

#### The Butter Scoring Contest.

The first quarterly butter scoring contest of the California Creamery Operators' Association, held on April 11th, brought out twenty-two entries. This number, while not as large as expected, aroused no end of interest among exhibitors and the butter men of San Francisco. The Dairy and Produce Review in its report sketches the results as follows: The entries represented a remarkable diversity of dairy conditions and it is doubtful if there was ever a contest held where butter came together that was produced under such varied conditions. Along the northern coast of California the grass is just getting into good growth, which has its natural effect upon the quality. In Siskiyou county, which had two entries, the snow has barely left, the cattle being fed mostly on hay. In the valleys of the Sacramento and San Joaquin rivers, alfalfa had its characteristic effects, but notwithstanding these conditions, the goods entered were certainly of the highest grade, all scoring over 93.

For the third time within the last few years the Point Arena Creamery carried off first prize. Mr. L. J. Siple, the buttermaker, is a well known hand at the business and those who are familiar with the quality of goods he has turned out during the ten or more years he has been in charge of creameries or cheese factories will not be surprised at his good fortune. Second prize goes to alfalfa butter, made by Mr. J. P. Murphy at the Hygeia Creamery at Newman. Mr. M. J. Hartson, a buttermaker who arrived from the East a year ago and now in charge of

the Walker Creamery in Siskiyou county, won third place and Mr. Geo. R. Roe of the Bodega Creamery fourth. The only entry from Humboldt county, made by Hans Eskildsen of the Ferndale Creamery, won fifth prize. According to the rules, these five, which are one-fourth of the total entries in the public creamery class, are entitled to participate in the cash prizes offered by the association, as the amount which will be divided pro rata will be \$125, or one-third of the fund after taking out the amount necessary for the prizes for the highest average scores in the four contests.

The entries were scored by W. D. McArthur, who is acknowledged to be one of the most competent judges on the coast. Speaking of the butter in general, he considers it a very superior grade, and all of it a credit to the makers.

The executive committee have decided upon June 27th as the date for holding the second contest. Each contest will be open to all buttermakers, and they can enter one or all, but only those who have made entries in all four will figure in the prizes offered for the average score in all the contests. Beyond doubt a large number of entries will be made in the June contest.

### THE FIELD.

#### Dry Land Farming in Utah.

The Utah Experiment Station has issued a bulletin on "Arid Farming, or Farming Without Irrigation." The subject, says the Rural Northwest, is one of interest, not only in Utah, but in all of the far-western States. In all of these States there are large areas of naturally fertile soil which can not be irrigated. The question is as to whether any method can be adopted which will make farming pay on such lands. It has already been found possible to raise large crops in districts in Oregon, Washington, Utah and other States in which the rainfall is very light. In Utah experiments in farming lands were commenced long ago. The early settlers of that State make a good many experiments in raising crops without irrigation, some of which were successful. As canals were built, however, the experiments on dry lands were discontinued. Within the last ten or fifteen years the growth of population in Utah has been more rapid than the construction of canals, and, as a consequence, many young men have found themselves without sufficient irrigated land, and have been led into a study of the value of the arid farm. Others have found that irrigated land, when used for grain raising, does not give sufficient returns for the capital invested and labor expended. It is their opinion that wheat growing on irrigated land is a thing of the past in Utah. It has been found by trial, also, that hundreds of thousands of acres, that for years were looked upon as barren wastes, can be made to yield large crops of wheat under a rational system of arid farming.

Under conditions favorable to the retention of moisture in the soil, it is believed that in Utah 12 inches of rainfall in a year should produce a crop of not less than fifteen bushels to the acre. In localities in Cache and Box Elder counties, where arid farming has been made a great success, the annual rainfall rarely exceeds 12 inches, and is frequently under 10 inches. The average crop of wheat in these counties has varied from fifteen to twenty-five bushels to the acre. The soils in Utah, like those produced elsewhere by arid conditions, are very deep and very uniform to great depths in chemical and physical properties. In the large valleys the soils are often 100 to 200 feet deep, with no practical difference from top to bottom, except that there is a little more organic matter near the surface. This depth of soil makes it possible to store great quantities of water in the soil. The problem before the arid farmer is to get as much of the rainfall and snowfall as possible to soak into the soil.

The general opinion of arid farmers is that deep plowing gives better results than shallow plowing. The general practice on dry farms in Utah is to turn the soil over to a depth of 8 to 10 inches. The deep plowing is beneficial, because it increases the capacity of the soil to hold moisture. Formerly arid farmers sold from 1½ to 2½ bushels of wheat per acre. Experience has taught them that from half a bushel to a bushel of wheat per acre gives better results. This accords with the experience of farmers in eastern Oregon and eastern Washington. In Utah press drills have come into almost universal use for seed-

ing. The bare summer-fallow on alternate years is common there, the main object being the storage of moisture. On some arid farms, however, annual crops of wheat have been grown for twenty years without appreciable decrease in yield. The bulletin recommends the sowing of clover and vetches in the fall after the wheat crop and then turning under the growing crop the following May or June.

There appears to be no way of finding out whether it will pay to farm lands in the arid districts except by actual trial. At the Utah Experiment Station, where the subsoil is a coarse gravel, experiments in

arid farming have given poor results. Much land which successful cultivators of arid land believed to be worthless without irrigation has yielded good crops when brought under cultivation. Sometimes, and especially on mountain or hill slopes, arid land is so well sub-irrigated that it is as productive as irrigated lands.

### THE GARDEN.

#### How the French Grow Mushrooms.

We frequently receive requests for information of the way in which mushrooms are grown in caves, cellars, under the benches in greenhouses, etc. In this State the idea often seems to be with reference to using old mining tunnels, etc. Many of those seeking such information will be interested in an account of French practice which John K. Gowdy, United States Consul at Paris, sends to the State Department:

**PLACES CHOSEN IN FRANCE.**—Nearly all the mushrooms consumed in Paris are grown in the disused quarries which honeycombed the country to the south of the city, more particularly in the neighborhood of Sceaux. Some of these excavations are of enormous extent and might properly be called, in certain instances, mines, for they have horizontal galleries, or levels, at various depths; but usually they have only one gallery, some 300 yards to  $\frac{1}{2}$  mile in length and from 30 to 150 feet below the surface. These galleries are generally from 7 to 10 feet in height, though occasionally so low that a man can scarcely stand upright in them. They are in most cases wide enough for two rows of beds, with a footway 18 inches wide down the middle.

These old quarries are chosen for mushroom culture for three reasons: First, because mushrooms can be grown in them all the year round; second, because they can be had cheap, the rental of these galleries with space for a double row of beds being only 3 cents per running yard; third, because the mushrooms are believed to be superior in flavor to those grown in the open air. American gourmets, however, generally prefer the uncultured mushroom, and perhaps the Parisians would if they had more opportunities for making a comparison between them. From two and one-half to three tons of these cave-grown mushrooms are sent to market every day, and the total value of the trade is about \$3,000,000 a year.

**METHOD OF CULTIVATION.**—The grower first procures a quantity of horse manure. The large growers generally contract with cab and omnibus proprietors, carriers and carmen, there being a belief that the dung of strong animals in constant work is better than that of hacks and hunters, which do little or light work. Moreover, in well-kept stables there is too large a proportion of clean straw with the manure, and this is quite useless to the mushroom grower, although he does not object to a certain proportion of wheat straw (not exceeding 50%) if it is sufficiently dirty, trodden and steeped in urine. Sometimes the growers will arrange to take all the sweepings of a large stable, paying \$1.15 per month per horse. Sometimes the manure is bought by the cubic meter or cartload, the average price being \$1 per 35.3 cubic feet.

**PREPARING THE MANURE.**—The manure is unloaded in a shady place, as near the mouth of the shaft leading to the quarry as possible. Many growers prepare a wooden frame of variable size, according to the heap to be treated, having the sides 50 inches high. This does not appear to be absolutely necessary, but probably facilitates the process of fermentation. The manure is shaken up and then pressed down with a fork, and the box is filled level with the top. The heap is then watered with a large watering pot.

Fermentation soon begins, and a thermometer thrust into the heap on the sixth day will mark a temperature of 150° F. After eight or nine days the frame is removed and the heap turned over, the portion in the middle being brought to the sides, and vice versa. The frame is then put back and the heaps watered again, but less copiously. Eight or nine days later the same process is repeated for the third and last time, and, after remaining another week or so, the heap is ready for the mushroom beds. The temperature has then fallen to 86° to 100° F. and the manure is brown, moist and does not soil the hands when touched. It has also lost about 25% of its bulk and does not fill the frame to a height of more than 3 feet. The total time occupied in the preparation of the manure has been from twenty-four to thirty days.

**MAKING THE BEDS.**—The manure is then thrown, or lowered in baskets, down the shaft and conveyed in narrow wheelbarrows to the part of the "cave" where the beds are to be made. The shapes of the beds vary according to the grower's fancy or prejudices, but they are rarely flat. If away from the wall they are often made "roof-shaped;" or, if against the wall, of the form of a "lean-to roof." If space has to be economized, and the height of the cave permits, stakes are driven into the wall of the



gallery, boards laid across them, and a mound made on the boards. "Sugar-loaf" mounds are also made in odd corners, and sometimes a cask will be sawn in two and the halves filled with compost. This last, however, is rarely used except to grow specimens for exhibition at shows.

The beds are still too hot to use, but if the gallery is not far below the surface, and is well ventilated, they soon cool down to the required temperature—between 60° and 65° F. If they do not, a stake is thrust into the mound and raised a few inches, admitting the cool air.

Dampness is not prejudicial—in fact, if the galleries are dry, watering is required before the mushrooms begin to grow, but not afterwards. On the big farms a well is often dug in the gallery, but in the small farms, or where this is not practicable, the following simple but ingenious plan is used: A tank is placed at the mouth of the shaft and filled; one end of a thick string or loosely twisted cord is placed in the water, and the other end lowered down the shaft and suspended over a tank at the bottom. The water passes along the string by capillary attraction and drips into the bottom tank.

**SOWING THE SPAWN.**—The beds are now ready for sowing. A bed that is in full bearing is pulled to pieces and bits of it are inserted into holes dibbled in the new beds, or a portion of an old bed from the previous season (for the spawn will keep indefinitely) which has been pressed is used. A piece of this "cake," when examined, will be found to have a number of white, thread-like filaments running through it. Portions of this cake—4x2 inches, or so—are stuck into holes in the new beds, some 18 inches apart, and covered. At the end of eight to twelve days they are uncovered, and if the filaments are found to have spread to the surrounding soil the cake is taken out and thrown away; if not, the "mise" (or cake) is left for a few days longer, or a fresh piece inserted. If the mise has taken, in twenty or twenty-five days these white filaments will be found diffused through the whole bed. Mushrooms often appear spontaneously on the beds, without being planted, the minute seeds having been probably carried on the clothes or hands of the workmen. The soil from around such mushrooms is called "virgin spawn" and is preferred to spawn from old beds, the growers believing that breeding "in and in" produces a scanty and stunted crop.

The bed is then lightly beaten with the hand and covered with the soil in which the mushrooms are to be grown. This may be anything that is not clayey; in stone quarries the dust of the stones is often used, or sand will do. If ordinary soil is employed, a hole is dug in a field or garden, the earth taken from the bottom and sifted from clods and stones. The object of taking the earth from deep down is to prevent the seeds of plants being transported. The mound is covered to the depth of an inch or so, and the surface beaten flat with a board or wooden shovel.

**THE CROP.**—In from twenty to thirty-five days the mushrooms begin to appear, singly or in clumps. Small, white granulations first appear at the base of the bed, and a few days later the whole surface is covered with fungi. They are considered ready to be picked when the cup has left the stem by about 1/2 inch, and are gathered by gently screwing them round and round till the stem comes out. The beds will continue bearing for four months, and in that time will produce six pounds of mushrooms to the square yard.

The mushrooms when gathered are sorted according to size and color, and are sold at from 10 to 20 cents per pound; but the price, of course, is subject to fluctuations.

**ENEMIES.**—The mushroom grower has not many enemies to contend with, and only one of these is serious. Two forms of parasitic mold, known as the "green" and the "soft"—possibly only different stages of the same disease—attack the mushrooms, but do little harm, the crops being grown and gathered so quickly. Rats and mice and slugs and snails are easily poisoned or got rid of, but the only enemy to be feared is a dipterous insect of the genus *Sciara*, smaller than the common house fly. This fly breeds in such quantities that the candles carried by the men who tend the beds are often extinguished by them. In the full-grown state this fly does little or no harm, but its larvae infest the beds and walls and destroy the mushrooms before they appear above the ground. After a season of four or five months the beds produce little, and the growers say they are exhausted and must "rest" for six or eight months. At the end of that time the beds bear as well as ever, and many naturalists assert that the so-called exhaustion is nothing of the kind, but is the work of these maggots. When the galleries are closed for some months these flies and maggots die, and work can be resumed. It has been proposed to get rid of this pest by burning sulphur, or by the fumes of sulphide of carbon, or some other agent, but the growers prefer the old method.

I have described the method of cultivation at some length, as the French growers assert that even a temporary departure from any of these rules will cause a failure of the crop. It remains only to be added that the galleries should not be lighted (mushrooms grow best in the dark), and should be kept scrupulously clean.

## ENTOMOLOGICAL.

### The Distillate Emulsion as a Spray for Citrus Fruit.

From a Paper by R. C. ALLEN of Bonita, San Diego County, at Pomona Farmers' Club Institute.

Since the introduction of fumigation as a means of subduing scale pests and the cheapening of this process to a point where it could be practically used, a battle royal has set in between its advocates and those of spraying. Each side claims everything for itself, and leaves no credit to the other. The truth of the matter is that different cases require different treatments. Nothing is so satisfactory as an effective job of fumigation, and when the conditions are such that an annual fumigation will keep the trees always free from every variety of scale pest, it seems to me that common sense indicates that as the proper method to use.

Unfortunately, there are many localities and conditions where this is not true. Then, also, the kind of tree makes a difference. While I do not assert that oranges and grape fruit have not been satisfactorily treated with spraying, yet I have never known of continuous successful work with them, and I do not hesitate to say that in San Diego county, at any rate, the destruction of value in oranges in the past ten years by spraying would many times over have paid the additional cost of fumigation.

This same statement is probably also true of San Diego county, as regards lemons up to the present time, but still it appears to me to be satisfactorily proved that lemons can be sprayed with a proper distillate emulsion, so as to have the fruit as free from injury as when fumigated.

**THE DISTILLATE.**—I believe that in the distillate emulsion we have a very great advance in effectiveness over any spray hitherto brought to public notice. It seems to me that so far as the foliage and branches are thoroughly wet the percentage of effective work will be fully as great as with fumigation and on purple scale I am inclined to think it more effective. By adding to the distillate emulsion sulphur cut with caustic soda, it is practicable to rid the orchard of red spider, silver and yellow mite at a very trifling additional cost, thereby saving the expense of a separate treatment for these pests, which seems not to be effected at all by fumigation.

Regarding the effectiveness of distillate emulsion in eradicating purple scale, I had experience last fall which was particularly encouraging. I had one tree in a lemon orchard fumigated heavily as an experiment—so heavy as to burn the foliage. The rest of the orchard, which had more or less purple scale in all stages of development, and also silver mite just appearing, I treated with a distillate emulsion, recommended to me by Mr. Kahles, which contained all the lubricating oils. Of course, all young scale was killed by both processes, but in the old scale I found a marked difference in condition when examined under a compound microscope some fortnight after the work had been done. The contents under shell of those treated by distillate was reduced to a soft white mush, which in time dried up, and the fruit, on being wiped, was easily made as clean as fruit not affected with scale. This effectiveness in killing large scale is, I think, almost wholly due to the heavy oil in the emulsion, and, of course, the ease in cleaning the fruit is wholly due to it.

On the other hand, the large fumigated scale clung tightly to the fruit, and upon examination under the microscope the individual eggs showed clear and translucent. In a job of fumigation done on orange trees—shortly before this—there is already a large hatch of purple scale; whereas in the lemon orchard treated with distillate, the destruction seems complete. It is now some five months since this work was done.

**SPOTTING.**—It is evident that in distillate we have a very valuable agent for scale destruction; but we are still in the experimental stage, as regards spotting the fruit. An emulsion containing the maximum of heavy oil is not likely to spot, and on lemons it can be used with entire safety. Such an emulsion is more likely to separate than one made with a higher gravity distillate, and may cause more trouble in this way, especially where hard, alkaline, or salty, water must be used, but its greater efficiency and freedom from spotting the fruit more than offset this disadvantage.

What we need is scientific study of distillate, with a view to ascertaining the causes of spotting, and methods for insuring a uniform quality.

In some work, which I have been doing lately, I find that in the same shipment the emulsion from some barrels will remain in condition, while that from other separates. Our water is hard, and must be broken by lye, and I find that emulsion which separates in such water does not separate in rain water. I also find that the addition of sulphur cut with lye will cause some batches of emulsion to separate and others not; all of which goes to show an inequality of condition of the distillate itself.

Last summer Prof. Cook suggested that the agricultural department of the State University ought to make a study of this subject, and give re-

liable information for the guidance of fruit growers. It is understood that the university has taken up the work, and I believe that great good will result.

We need all the help we can get from every source, in our incessant warfare on the scale. Let us not endeavor to prove that either spraying or fumigation is the only remedy, and that the other is worse than useless, but rather strive to improve both methods. Sometimes one will be the best to use, and sometimes the other.

In regard to spotting fruit with distillate, the danger is not so great in the cooler months as during the summer. I am spraying orange trees at the present time, the fruit being picked and the blossoms not yet open. This job will carry them to the late autumn when they can be sprayed again without injury, as I find that the few oranges left on the tree are not spotting at the present time. A great deal of the distillate emulsion offered for sale cannot be used with safety at any time, and should of course, be left alone.

**A BETTER KILLER.**—I think it is an undoubted fact that the distillate emulsion will kill scale farther along in its development than fumigation will, and also it will kill old scale just beginning to hatch, which will not be reached by fumigation. It is not, therefore, so essential to catch the scale as one precise time, and this is important, as, in the coast districts, particularly, it is rarely possible to find all the scale at the same stage in a large orchard. If it were, fumigation would be so satisfactory that it would not be necessary to look farther. This greater efficiency in killing makes up for the fact that it is rarely possible to wet thoroughly a large and heavily foliated tree. While the results from fumigation will be as satisfactory with a heavily as with a sparsely foliated tree, in spraying, the results are likely to be in proportion to the thickness of foliage and size of the tree. For this reason, and because scale hatch more uniformly in the interior, it is not probable that spraying will ever be as popular there as fumigation, especially on orange and grape-fruit orchards.

The capacity of the distillate to kill old scale just ready to hatch is important. It is like killing a gopher with a litter of young, only more so; as a single scale may have 2000 eggs. The heavy oil finds its way under the edge of a scale in which the eggs are about to hatch, and thus loosens the scale and kills the eggs.

**COMPARED.**—In comparing the effectiveness of spraying with distillate and fumigation with cyanide—taking for granted in both cases that the materials have been good and the work properly done—I should say that, in large trees, where the hatch has been uniform and the work done while the scale is still young, the advantage will be largely with fumigation; on the other hand, in small to medium trees, especially lemons, which have a comparatively sparse foliage, and also where scale is in various stages of development, that the spraying will not only cost less, but will kill a larger percentage of the scale.

Therefore, in deciding which method to use, the orchardist will be guided (1) by size and variety of tree, and (2) by condition of scale. Whichever method he uses, if he gets a good job, he will have no cause for regret.

In the development of methods of spraying from the first crude beginnings with a syringe, great progress has been made. The hand pump, with compression chamber and pressure gauge, has been developed into the sprayer with gasoline engine. The credit of the first gasoline engine power plant belongs, I believe, to San Diego, where one constructed by S. R. Gunnis, at that time Horticultural Commissioner, was in operation in 1895, and perhaps earlier. The ability to maintain a high and uniform pressure adds greatly to the effectiveness and rapidity of the work.

**DISTILLATE AND WATER.**—The latest thing in spraying with distillate is the Stearns Bros. process, by which oil and water are emulsified on the spray wagon, and no soap is used. They use a 28° gravity distillate, from which they claim the asphaltum or any refuse is removed by sulphuric-acid process, and certain acids by a soda process, giving as a result a clear, light-colored distillate. The oil and water are agitated on the wagon, and the emulsion is completed by the pressure in the pump and by the expansion when the spray leaves the nozzle.

It is claimed by the originators of this method that not only have they freed the distillate from every impurity which might cause a spot, but also that by doing away with the use of soap as an agent in emulsifying they have eliminated the most frequent cause of this trouble.

I doubt whether whale oil soap in an emulsion causes spotting. I believe this comes from the distillate itself, and that by clarifying it they have a safe product to use. Where an ordinary emulsion is used a 24° gravity distillate, containing all the lubricating oil, is undoubtedly the safest and best to use. The oil perhaps counteracts any quality which otherwise would spot. Mr. Kahles, who introduced this wash, tells me that he has always used the oily distillate, and that he has never spotted his fruit; while an emulsion, which I used last summer, and which spotted badly, was made from a 38° distillate, which seems to confirm the theory that the heavy oil is needed for satisfactory results.



## Agricultural Review.

### ALAMEDA.

**FRUIT OUTLOOK PROMISING.**—Niles Correspondence Oakland Enquirer: The fruit outlook at this time is still promising. The apricots are well set; the crop will be spotted, but the output for the year will be about 70% of last year's crop. Cherries promise to be a good crop and good size. Almonds will be light, but a little larger crop than last season. Prunes are looking well and promise a large crop.

### BUTTE.

**BIG FRUIT CROP.**—Chico Enterprise: There are in close proximity to Chico about 1000 acres of Muir peach trees, which will produce this year, estimating very conservatively, at least 5000 tons of fruit. There are also several hundred acres of Crawford peaches which will produce at least six tons to the acre. There are about 1500 acres of prune trees, which will produce 3750 tons of dried fruit. The 500 acres of almonds will yield 250 tons of nuts. Within 3 miles of Chico there are 250 acres of Bartlett pears which will yield about 1500 tons of fruit. There is an enormous crop of cherries, and all indications point to a yield on the Bidwell estate alone of not less than 400 tons. Besides the yield of the Bidwell orchards, there will be at least 250 tons produced in other orchards near this city. A gentleman who has made the fruit business a study estimates that every acre of bearing orchard in this vicinity will bring the owner from \$50 to \$100.

### CONTRA COSTA.

**MR. O'HARA'S ALMOND CROP.**—TO THE EDITOR:—The item in last week's PACIFIC RURAL PRESS in reference to my almond crop, copied from the Martinez Gazette, has no foundation whatever. I did not say (as reported by the Gazette), "I will have no almonds at all." I will have a good half crop of almonds and a good crop of peaches, apricots, cherries and prunes.—JAS. O'HARA, Oakley.

### LOS ANGELES.

**PROFITS OF BERRY FARMING.**—Herald: Eight years ago W. Bryant began berry farming near Gardena on leased land, taking a four years' lease on five acres, with privilege of purchase at \$75 an acre. He also rented seven acres, on which was a half-acre patch of two-year-old blackberries. He set out an acre of blackberries and five of strawberries. In two years he paid half the price of the five acres from berry crops. His blackberry patch is eight years old, the half-acre ten. The dead canes have now been removed and the vines still bear well. Blackberries pay about \$250 an acre, and his five acres of strawberries last year, a year of high prices, paid him \$4750. Expenses equal to about half the income. His strawberries have paid him from \$200 to \$1000 an acre; net income \$200 to \$500 an acre. He owns twelve head of fine cows and keeps them on alfalfa pasture, at good profit. His buildings are substantial. He owes no one a dollar.

### MONTREY.

**IRRIGATING POTATO LAND.**—Salinas Index: H. L. Davis has an extensive pumping plant in operation irrigating his land near the Hilltown bridge. Two 10-inch wells supply the water and a large Corliss gasoline engine does the pumping. The engine is driven by distillate costing 11½ cents a gallon. The pumps throw out 2000 gallons a minute, or 1,680,000 gallons in fourteen hours. Twenty men are employed in getting 320 acres ready for planting potatoes and beans—some distributing the water, some plowing and some planting. With irrigation the land produces 120 sacks of potatoes to the acre, whereas, without irrigation, not over sixty sacks are produced. Mr. Davis values his land at \$300 per acre. He gets a rental of \$19 an acre.

### ORANGE.

**WALNUT GROWERS.**—Anaheim Gazette: The annual meeting of the Fullerton Walnut Growers' Association was held recently. By-laws were amended so that in future annual meetings will be held the last instead of the first Saturday in April. The following were elected directors for the coming year: W. M. McFadden, R. H. Gilman, F. J. Teale, B. F. Porter and L. P. Drake. W. M. McFadden was chosen president, R. H. Gilman vice-president and Arthur Staley secretary. Arthur McDermont was continued as manager of the house. Walnut men are encouraged over crop prospects. The manner in which trees are blooming indicates a splendid crop for next year.

**PROBABLE SHORT CROP.**—Santa Ana Blade: J. N. Smith, one of the best known fruit buyers in southern California, reports that as the result of close investigation he finds that from present prospects there bids fair to be not more than half a crop of apricots in Orange county this

season. Mr. Smith has visited all the apricot sections of importance, and finds conditions about the same everywhere. The cause of this probable shortage of the crop is due to the premature falling of the blossoms, the result, so Mr. Smith thinks, of the cold spell just about the time the buds opened. Mr. Smith's report to San Francisco houses early in the season was to the effect that the present season's crop promised a phenomenal yield, but his advice will be revised and made to fit conditions as found later.

### RIVERSIDE.

**MODEL DAIRY FARM.**—Perris Progress: H. K. Small, on the Burbank ranch, near Ethanac, is now milking seventy-two cows, and has 116 head of stock, besides hogs. He will keep adding to his herd by raising all heifers and fattening and selling all steers. He expects in due time to have 200 milk cows. In his mammoth new barn he has room to store large quantities of hay and furnish shelter for the cows to feed. This summer he proposes to erect two silos, for he has found that is a profitable way to feed milk cows. The cows are principally fine Jersey stock, with some Holstein and a few of other breeds. His thoroughbred Jersey bull is the grandson of the famous Don Pedro. On the Burbank ranch there is a large acreage of alfalfa, but Mr. Small will supplement that hay with other fodder. He will plant this season eighty acres in field corn and Kaffir corn. All the arrangements and appliances are complete for manufacturing gilt edge butter. At the present time the cows average six pounds of butter apiece a week, which finds a ready sale at the highest market price. Several hundred pounds are shipped every week. The shipments will double as soon as Mr. Small can get the cows.

### SACRAMENTO.

**HOG CHOLERA ON THE COSUMNES.**—Bee: Dr. L. A. McLean, county veterinary surgeon, received complaints from the Slough House locality to the effect that an epidemic of hog cholera existed there; that many hogs had died and that the carcasses had been thrown into the Cosumnes river. An investigation proved that an epidemic of hog cholera does exist in that locality, and that the death rate has been very large, but that there is no truth in the reports that the bodies of dead hogs had been thrown into the Cosumnes river. On the contrary, the farmers who lost hogs buried the carcasses deep in the ground. Instructions have been given which, it is expected, will soon stamp out the disease.

**PROPAGATING MONGOLIAN PHEASANTS.**—Record-Union: Mongolian pheasants are reported as fairly plentiful along the Cosumnes river, as the residents there are breeding them and giving them their liberty. George Neal has five hens and two cocks on his place all breeding. He is crossing them with bantams.

### SAN JOAQUIN.

**LODI OLIVES.**—Sentinel: From a showing made this week olives grown in the vicinity of Lodi are far ahead of those of other localities in the State. A Santa Barbara firm, in order to test the quality, sent to Beckman & Beattie for a sample of the olives grown here. The local dealers submitted a sample, with the result that the Lodi olives were decided to be best of any tested, over a dozen different sections of the State having been represented in the tests. On account of this showing Messrs. Beckman & Beattie yesterday sent 100 gallons of Lodi olives to the Santa Barbara firm. Mr. Campodonica, who owns the olive farm on Cherokee Lane, reports that olive growing is one of the best industries in which a person can engage. He purchased the H. H. Moore ranch two years ago for \$9000. The first year's crop consisted of 3000 gallons of oil and 52 barrels of olives, which returned him \$7000. The second year's crop was light and brought him but \$4000. Still he is pretty well satisfied, for the two years returns represent more than the purchase price of the property.

### SHASTA.

**NOVEL WAY OF MOVING SHEEP ACROSS A STREAM.**—Cottonwood Herald: A novel way of crossing a creek with a band of sheep was performed here last Monday morning. Some ten or twelve wagons were run into the creek and planks laid over them, thus forming a good walk over which the sheep were crossed without any trouble. The owner of the sheep was a stranger, but he seems to know how to meet all such difficulties as that.

**ANNUAL RODEO.**—Free Press: The annual roundup—the big event of the year with stockmen—will begin about April 25. There are over 3000 head of cattle and there will be about twenty-five cowboys in the rodeo. The Bald Hills range is about 25 miles square. The cattle are in pasture at different points on the range, and two or three cowboys are sta-

tioned together bunching in separate herds portions of the cattle. At a set time all begin driving towards a central spot, and when the cattle are brought together there is a veritable sea of bellowing, kicking animals, surrounded by the cowboys. This year's roundup is expected to be the biggest and most exciting ever held on the Bald Hills range.

### SOLANO.

**LARGE ORDER FOR FRUIT.**—Republican: The Luehning Co. has already received an order for 10,000 boxes of fancy packed fruit for the German trade. This is an advance order for early shipment as soon as packing begins, and is only a fore-runner of what may be expected later.

### SONOMA.

**NEW CONDENSED MILK PLANT.**—Santa Rosa Republican: A large creamery and condensing plant is being erected by C. H. Gish at Valley Ford on land purchased from H. M. LeBaron. The building is to have a substantial foundation of concrete and is to be thoroughly equipped. The machinery and apparatus will cost \$1000.

**HOPS DOING WELL.**—Sonoma County Farmer: George Hall says that hops which have been backward on account of the wet weather are coming along fine with the warm days. It costs a little more for ventilation this year, but the prospect is the best he has seen at this time of the year, and 12½ cents is being offered on contracts.

**WAR ON CHICKEN THIEVES.**—The chicken farmers of Corona are waging a crusade against a band of thieves. The farmers have been greatly annoyed by continued losses of chickens, and have been sleeping on their shotguns for weeks. Their vigilance was rewarded a few nights ago by getting a sight of the thieves. A regular fusillade was opened on them and they could hardly have escaped being hit, but they were not captured. Not less than twenty shots were fired at the prowlers, each farmer taking a hand as the thieves ran through his place. O. T. Riewerts discovered the thieves by a bullseye lantern they carried, and fired on them at close range. The prowlers were driven into the hills. The farmers say the thieves are an organized gang of a dozen men. They have operated at Corona for weeks and have stolen chickens by the wholesale.

### STANISLAUS.

**A MONEY-MAKING COW.**—The Ceres Creamery paid Mr. Rodrigues, a patron, over \$11 for the milk from a single Jersey cow for January and \$10.11 for the milk from the same cow for February, the short month. The account for March is not yet made out. Leslie Whitmore, manager of the creamery, vouches for the above figures.

**REVENUE FROM WEST SIDE CREAMERIES.**—In the report to the stockholders of the New Era Creamery we find that for the month of February there was received 18,812 pounds of milk, producing 7397 pounds of butter fat. This netted 20½c, or, in other words, returned to the farmers over \$5000. The Acme Creamery and the plant at Crow's Landing did nearly as well. In addition to this, large shipments of cream are made by private parties, who realize handsomely. It would be safe to say that for the month of February over \$15,000 was distributed in the section of Newman.

**MONEY IN DAIRYING.**—Modesto Herald: L. L. McCumber of Crow's Landing, long a wheat grower in this quarter, is milking forty cows at present; some of them he owns, the remainder he rents. He also rents the alfalfa land on which the cows are pastured and pays the water tax. In the face of these handicaps he is doing well, but, of course, is obliged to work hard, employing no labor outside of his family. "It is a much better proposition than wheat raising," he says, "and I had rather have it and pay \$4 per acre for irrigation, if necessary, than return to the wheat ranch. With twenty acres of alfalfa and twenty cows of my own, I can make a comfortable living for my family." He formerly took his milk to the Crow's Landing creamery. Six weeks ago he put in a hand separator and has since been sending his cream to San Francisco, receiving for it 2 cents a pound above the Dairy Exchange quotation. The change represents a gain of \$1 per day to him.

### SUTTER.

**GOOD PRICES FOR WOOL.**—Sutter County Farmer: The spring wool clip is now coming in and there seems to be quite a demand for the same. In the vicinity of Red Bluff contracts were made this week for 15c per pound, and the stockmen expect it to go a cent higher. In the vicinity of Yuba City some sales are reported at 12½c.

### VENTURA.

**A FINE PALM SOLD.**—Ventura Demo-

crat: A fine Cocus plumosa palm which has long graced the garden of Mrs. Theodosia B. Shepherd was shipped this week to Mr. Edward Smith, a millionaire mining man of Denver, Colo., to adorn his place in Los Angeles. There are but few large specimens of this beautiful palm in the State, and Mrs. Shepherd's is one of the largest, measuring 30 feet in height and 6 feet 2 inches in circumference at the base. It belongs to the same family as the cocoanut palm and has a long trunk and a beautiful top of graceful, plummy fronds or leaves. Mrs. Shepherd has a variety of beautiful specimen palms, though but one large Cocus. She was loth to part with this fine tree, but as it stood very close to an immense Phoenix Cananensis palm and a very large Norfolk pine, it was really necessary to move it this season to give it room. Otherwise it would have remained to wave its grateful fronds in the Shepherd garden in Ventura.

### TEHAMA.

**WOOL MARKET SOON TO OPEN.**—Red Bluff People's Cause: John Lee, the San Francisco wool man, is the first of the wool buyers to enter the northern California market. Mr. Lee has been here a few days and he is taking a keen interest in wool matters and conversing freely with the wool growers. The wool market will open within a week. The clips are already arriving. It is not known what the opening price will be, but the growers hope to get 16 or 17 cents a pound.

**SOME WOOL SELLING.**—Red Bluff News, April 21: The wool market has opened and many of the Tehama county wool growers are in town. There are also many wool buyers here, J. Wollner, C. Greene, J. Lee, B. Lee, P. W. Watson, I. Harris, T. Smith, T. McAdams and G. H. Tryon. So far the growers and buyers have not generally agreed on prices, although 14½c. to 15½c. and 15½c. is being offered. On Saturday there were a few sales made, C. J. Gooch's wool, 105 bags, was reported sold for 16c. This is a very choice lot of wool. J. H. Benjamin sold 20 bales and F. Nunes 35 bales, both at private prices. These three lots were bought by J. Wollner. The bulk of the spring clip will likely be sold by the middle of the week.

**DANGEROUS TO ASK HIGH PRICES FOR CATTLE.**—A big sale of Herefords was made at Chicago on March 26 and 27 by F. B. Sotham, who sold seventy-four head from his herd at Chillicothe, Mo. The cattle averaged \$449.50. One two-year-old heifer, sired by Corrector, sold for \$1600.50. Gerber & Conard of Paynes creek are raising and selling the same breed of cattle, but Mr. Conard said that should he ask such a price for the cattle raised here the would-be purchaser would probably drop dead in his tracks. There is no doubt that as fine cattle are raised in California as in the East, but such fancy prices cannot be obtained.

### TULARE.

**A KISSING BUG.**—Advance: E. F. Dunlap, a young man employed on a farm near Tulare, was bitten or stung by a queer looking bug while at work Saturday morning. The insect had gotten into his shirt somehow and bit him twice on the breast. In a few minutes he was a pretty sick man, and his chest was badly swollen for several inches about the bitten spots. The mischievous bug was about half an inch in length, with a proboscis about a quarter of an inch long.

### YUBA.

**FRUIT AND GRAIN PLENTIFUL.**—Marysville Democrat: Representative growers of grain and fruit in this vicinity report the condition at this time unusually good for both wheat and fruit. The acreage of wheat and barley is about the same as last year, but the yield will undoubtedly be in excess of the average in 1891. Fruit will be plentiful, but the important question of quality cannot be determined for some time. It is conceded that more moisture is essential to the production of large, matured fruit, particularly so of early peaches.

## Horse Owners! Use

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## THE HOME CIRCLE.

### The Night Beautiful.

Day-long the fiery and unputying sun  
Flamed in a sky that glowed like burn-  
ished brass;  
Dun stretched the ribbon of the road, and  
dun  
The reaches of the grass.

In the still willow shadows by the pool  
The cattle herded, standing dew-lap  
deep;  
And all the beechen aisles, erewhile so  
cool,  
Were sunk in fervid sleep.

But with the dusk the vesper ecstasies  
Of the charmed wood-thrush stirred  
our hearts to hope;  
And then there breathed the blessing of a  
breeze  
Adown the western slope.

The graceful garden primrose set alight,  
Its little globes of lemon-gold, and soon  
High in the deep blue garden of the night  
Flowered the great primrose moon.

And we forgot the garishness, the glare,  
The parching meadows, and the  
shrunken streams,  
And in the glamour of that magic air  
We gave ourselves to dreams.

—Clinton Scollard, in Harper's.

### A Night in the Philippines.

No breath disturbs the forest hush; the  
moon lies ghostly white  
Above the tent where moaning lies  
through half the tropic night  
A boy with eyes like azure seas, hair like  
the glossy sloe,  
And cheeks where torrid suns have kissed  
the virgin white below.  
That fair young form has worn the blue,  
as vet'ran soldier might,  
For glory bought at fearful cost he pays  
the debt to-night.  
Comrades bend o'er him wan with grief,  
their scarred cheeks wet with tears,  
He sees them not, but vainly seeks a face  
of other years.  
The pale moon glides athwart the door,  
his young eyes light with joy,  
"Oh, mother! have you come at last! I  
knew you'd find your boy."  
The sad moon greets his dying lips and  
lies upon his breast,  
While happy 'neath that mute caress the  
soldier sinks to rest.

—May Elliott Huston, in National Mag-  
azine.

### A Rapid Promotion.

The day was one of October's rarest.  
The car windows were all open, and  
the swift motion created a pleasant  
draft, that carried no suggestion of  
coughs or colds with it. It was car  
No. 511 of the main line, and the con-  
ductor was No. 381.

He was a pleasant appearing con-  
ductor, was No. 381, young and well  
built, with bright gray eyes, and his  
cap tilted back on his head in true  
boyish fashion. He was an alert con-  
ductor, too, and keenly alive to the re-  
sponsibilities of his place. He helped  
old ladies and children aboard, he made  
the passengers sit closer and kept a  
sharp supervision over all the details.

There was a tall man with gray hair  
and a white mustache on the back  
platform, a very well dressed man, who  
seemed deeply interested in the trip.  
He had boarded the car while No. 381  
was inside collecting fares, and, as this  
collecting process took some time, the  
gray-haired man had a chance to make  
a study of the roadbed as the car  
rumbled along. He was looking over  
the platform rail when No. 381 tapped  
him lightly on the shoulder.

"Fare, please."

The gray-haired man slipped his  
fingers into his change pocket and  
drew out a half dollar. As he pushed  
it toward No. 381 he slightly turned  
his head.

"George!" He couldn't repress a  
little start of surprise.

"Hello, father," said No. 381, as he  
thrust the coin into the proper pocket.  
"Tickets?"

"No," replied the gray-haired man,  
with some sharpness. He stared hard  
at No. 381 as he counted out the  
change and thrust it into his hand.

"Transfer?"

"No," snapped the older man.

"How are you, father?"

"Well enough. How is it with you?"  
"Fine," laughed No. 381. Then he  
looked a little wistfully at the gray-  
haired man. "I wouldn't mind shak-  
ing hands with you, father. It's four  
years, you know, since I had the  
chance."

The old man slowly put out his hand,  
and No. 381 gave it a warm pressure.  
"Getting down to the husks,  
George?"

"Husks, father? Oh, I remember  
now. You allude to the unfortunate  
young man in the Sunday-school lesson,  
the young man who lived on husks and  
tended swine. Yes, yes. But there  
have been no husks on my menu,  
father, and the end seat car hog is the  
nearest approach to the porkers. No,  
I get three good meals a day and carry  
home my \$12 every Saturday night." He  
laughed as he said it, his eye on the  
interior of the car.

"But can't you get something bet-  
ter than this?"

"Haven't tried. You see, this was  
the best I could do after being thrown  
out of a better job by the burning of a  
bicycle factory, and I promised the  
trolley superintendent that I would  
stay in the employ of the road at least  
a year if they'd take me on, and just  
six months of it have passed. Change  
here for Ellingwood belt line."

The old man followed No. 381 with  
his keen gray eyes, that were very  
much like the conductor's, though  
deeper set, and a new light came into  
them.

"You are married, George?"

"I wrote you that I was, father."

There was a little silence.

"And I have a little boy, father,  
three years old. I wish you could see  
him. Why can't you? We live at No.  
37 Cornwall street, close to the end of  
this line. You'd be very welcome,  
father."

The face of the old man hardened,  
and he shook his head.

"I have very little time," he said.

"I am here on important business."

"Very well," said No. 381 quietly.

"You'll be welcome any time." Then  
he added: "I take the down car here.  
Good-by." He leaped off, caught the  
rail of the approaching car, waved his  
hand and was gone.

The old man sighed as he turned  
back. Somehow he seemed to have  
lost all interest in the condition of the  
roadbed.

When the end of the line was  
reached, he stepped from the car and  
looked about him. Then he walked  
over to the starter's little station.

"Will you kindly direct me to No.  
37 Cornwall street?" he said.

Ten minutes later the gray-haired  
man knocked at the door of the little  
cottage on Cornwall street. A neat  
young woman responded. It was not  
a favorable hour for calling, but the  
young woman bore a trim appearance,  
her hair was nicely arranged, and  
there was an air of refinement in her  
greeting that the old man liked.

"This is the home of No. 381, I be-  
lieve," he said, as he raised his hat—  
"I mean of George Glazier?"

"Yes, sir, but he is not at home. He  
will not be at home until six."

"I have come some distance to see  
him," said the gray-haired man.

She looked at him with a new in-  
terest. He was an old man, and she  
fancied he looked tired.

"Will you come in and rest?" she  
asked, in her gentle voice. "Per-  
haps you can leave a message."

"Thank you," he said, and followed  
her into the pleasant little parlor.

His keen gray eyes traveled about the  
room and returned to the woman. "I  
beg your pardon," he said, "but would  
you mind giving me a little of your  
time?"

She looked at him wonderingly and  
then seated herself.

"You can't really be happy here,"  
he said, abruptly.

She started at the suddenness of the  
remark.

"I do not know what you mean,"  
she said.

"I mean that this little house, this  
lonesome neighborhood, the lack of nice  
clothes, the fact that your husband is  
but a poorly paid employe, the de-  
sire for those things that just a little

money would secure, must make you  
discontented at times."

Her color rose. She held her dimpled  
chin a little higher.

"Do I look discontented?" she  
asked. "Could I be discontented with  
so much to be thankful for? We have  
our health, we have a cozy home, we  
have our little Stephen."

"Eh!" cried the old man. "You  
have what?"

"Our boy, our baby boy. His name  
is Stephen."

"His name is Stephen," the old man  
repeated, and was silent for a moment.  
Then he gently added: "May I see  
him?"

"He is asleep," replied the young  
mother. Then she looked at the gray-  
haired man a little severely. "I  
trust," she said, "that your business  
with George is not planned to make  
him discontented. I think you will  
fail. We are both agreed that George  
isn't appreciated at his true worth—at  
least I have tried to make him think  
so. But he is doing the best he can.  
What could he expect? He came out  
of college without the slightest knowl-  
edge of what earning a living meant,  
and then he met me. Perhaps we  
were wrong, but we were young, and  
George braved his father to marry  
me. Well, it was something of a  
struggle, but we met it with courage,  
and we never despaired."

She threw a defiant little look at  
him as she uttered the last words.

"I had no desire to hurt your  
pride," said the gray-haired stranger.

"If I did, I beg your pardon. Lonely  
old men grow peculiar, you know.  
But, here, I fancy I can explain a little  
of the business that brought me to  
your home. I came to the city to buy  
a controlling interest in the company  
that employs your husband. I have  
been looking over the property,  
and in doing so ran across him. I—  
I liked his appearance, but at the same  
time I am free to say that, to my mind,  
he is not the man for the place." He  
paused and cleared his throat, the  
young woman steadily regarding him.  
"He told me that he had promised to  
remain in the employ of the company  
a year. I suppose he will keep his  
word?"

"He always keeps his word."

"Does he look for promotion?"

"Yes. He hopes to be made a  
starter at the barns when the year is  
out."

"Yes. Well, as I have made up my  
mind that he is not the man for con-  
ductor, I mean to offer him something  
a little better. If he shouldn't care for  
the startership, how would barn boss  
or assistant superintendent suit him?"

The young woman smiled faintly.

"There is no question about it," she  
said.

"Perhaps he would like the super-  
intendency?" the old man added.

"He would," murmured the young  
woman.

"Very well," said the gray-haired  
man.

"Between you and me we will  
consider him successfully promoted  
through all these grades." He leaned  
a little forward. "The fact is," he  
slowly said, "I am going to make him  
secretary of the newly organized com-  
pany at what I think he will consider  
a very attractive salary." He paused  
and looked sharply at the young wo-  
man, who had turned her eyes from him  
and was staring intently at the pretty  
carpet. "Are you laughing over  
there," he asked.

"No," she quickly answered, "I'm  
crying."

Then she arose and crossed over to  
the old man and took his hand and  
bent down and lightly kissed his cheek.

"This is very, very good of you,  
father Stephen Glazier," she softly  
said.

"Pooh, pooh!" he cried. "And you  
knew me all the time, and yet had  
never seen me?"

"I knew your voice the instant you  
spoke," said the young woman. "It is  
just like the voice of George."

The old man looked anxiously toward  
the inner door.

"Isn't that boy Stephen awake  
yet?" he asked.

That evening George's smiling wife

met George at the door, and put her  
arm about his neck as she stopped him  
in the hallway.

"Why, what is it, Millie?"

"We have a visitor, dear."

"Is—is it father?"

She slipped away from him and  
opened the parlor door, and George  
looked in.

The old man was sitting in the  
coziest chair in the dimly-lighted room,  
and on his knees, with his sunny head  
pillowed against his breast, sat the  
little boy.

As the keen gray eyes rested on  
George's smiling face the old man held  
up his hand.

"Hush!" he whispered. "Stephen's  
asleep!"—W. R. Rose in Cleveland  
Plain Dealer.

### Concerning Pianos.

"A piano," said a dealer, "will sound  
better standing directly on the floor  
and in a room simply furnished, than it  
will standing on a carpet in a room  
elaborately furnished, having heavy  
hangings on the walls, and so on.

"Sometimes a piano will develop or  
seem to develop, a flaw in some one  
note, which comes to have a rattle, or  
jingle, or unpleasant burr to it. But  
this jarring sound, which seems to  
come from the piano, may, in reality,  
come from some source quite outside  
of it.

"Any given note, when struck, pro-  
duces a certain number of vibrations to  
the second. There may be in the room  
some object that is in tone sympathy  
with some particular note, and that  
will be set in motion by it when that  
note is sounded.

"The owner of a fine piano sent to  
us one day to say that there was some-  
thing wrong about a certain note of  
the instrument, so that that note had  
an unpleasant sound when struck.  
When I heard the note sounded I knew  
at once that the disagreeable rough-  
ness or buzz about it was due not to  
any defect in the piano, but to some-  
thing somewhere about in the room;  
and, asking the lady to strike that note  
occasionally, I walked around the room  
to see if I could locate it.

"Passing across the middle of the  
room, as that note was struck, the  
cause of the jarring accompaniment of  
it was discovered to come from the  
vibration of one of the glass globes on  
the chandelier overhead.

"The owner of the piano was almost  
incredulous as to this, the sound had  
seemed to come so plainly from the  
piano itself. But when, at my request,  
she stood under the chandelier and I  
struck the note, she was readily con-  
vinced.

"I made that globe immovable, and  
then struck the note on the piano. The  
answer was clear and sweet and true.

"So you see the sound of a piano  
may for one thing depend upon its sur-  
roundings; and what may seem to be a  
defect in a piano may be in reality at-  
tributable to something quite apart  
from the piano itself.

"And thus it might easily be that  
some noble instrument that had seemed  
to be declining, or to be developing  
faults, owed its apparent change to a  
change of environment, or to some spe-  
cific outside cause, and was in reality  
as good as ever; as would happily be  
discovered whenever the instrument  
was again brought under favorable  
conditions."—New York Sun.

A GENTLEMAN asked a question of a  
boy who was fishing. The boy mumbled  
an indistinct response. "Why can't  
you speak plainer?" asked the gentle-  
man. "What have you in your  
mouth?" "Wums, wums, fur bait,"  
answered the boy. "That was the  
first instance I ever knew," remarked  
Mr. Stockton in telling the story, "of  
anybody's really speaking with baited  
breath."

"I can't understand about this wire-  
less telegraphy," said Mrs. Wunder.  
"Why, it's plain as day," said Mr.  
Wunder. "They just send the mes-  
sages through the air instead of over  
wires." "I know that," said she, "but  
how do they fasten the air to the  
poles?"



### Too Little and Too Big.

To-day I asked my mamma if I could whittle.  
Yes, I did.  
'Oh, no, my little girlie,' said she, 'you are too little.'  
So she did.  
But Tom stepped so hard right on my toe, I cried, I did.  
She said, 'Oh, you're too big a girl to cry out so!'  
That's what she did.  
Why can't I cry, if I am little?  
Or, if I'm big, why can't I whittle?  
—School Record.

### The Sense of Smell.

Very careful experiments have lately been made to test the delicacy of the sense of smell in human beings. A series of solutions of five different substances was prepared, each series being so arranged that every solution was of half the strength of the preceding one. These series were extended by successive dilutions till it was impossible to detect the odors. The order of the bottles containing these solutions was completely disarranged, and the test consisted in the attempt to classify them by the sense of smell alone. An equal number of male and female observers were selected from the best apothecaries' shops, and each was required to arrange the bottles. The males were able to detect the smell of nitrate of amyl in the solution of 1 part to 783,000 of water and the females were able to detect it in the solution of 1 part to 311,000 of water. The oil of wintergreen was detected in about the same proportion and to the same extent of dilution. There was, therefore, a very great preponderance in favor of the males as to the sensitiveness and discrimination of the sense of smell. This is certainly an astounding fact.

### Generalities About Boys.

According to Success, it is not the boy who is surrounded with great laboratories and elaborate apparatus, but some Michael Faraday who, in the attic of an apothecary shop, experiments with a can of water and an old syringe who becomes eminent.

It is not the modern astronomer who is educated and trained in scientific instructions and great observatories, but enthusiasts like the boy Galileo, who made a telescope out of pieces of glass, who make the greatest discoveries. With this home-made telescope he discovered the rings of Saturn.

It is not the boy who is surrounded by the best implements and tools that ingenuity can manufacture, but an Eli Whitney making a cotton gin in a cellar in the South with the simplest tools, or a Cunard whittling the model of a ship with a jackknife, that makes great industrial discoveries.

### Never Poultice an Eye.

We are often asked which is best for an inflamed eye—hot or cold poultices. Therefore, we will submit the following advice, says a medical journal: If an eye is inflamed from a wound or an injury, a clean cloth or wad of absorbent cotton wet with cold water containing boracic acid is probably the best. If the inflammation be due to a diseased condition which has not resulted from a wound or injury, hot water should be used instead of cold water. Never poultice an eye under any circumstances, because poultices tend to rot the sound tissues and destroy the sight.

### Why He Wanted the Minister.

Willie had swallowed a penny, and his mother was in a state of much alarm.  
'Helen,' she called to her sister in the next room, 'send for a doctor. Willie has swallowed a penny.'  
The terrified boy looked up imploringly.  
'No, mama,' he interposed, 'send for the minister.'  
'The minister!' exclaimed the mother.  
'Yes, because papa says our minister can get money out of anybody.'—Pittsburg Bulletin.

## DOMESTIC ECONOMY.

### Domestic Hints.

**CREAMED CORNED BEEF.**—For one pint of chopped corned beef make a cream sauce with one tablespoonful each of butter and flour and one cupful milk. Season well with salt, pepper and onion juice; stir into the meat. Simmer for three minutes, and in serving sprinkle thickly with coarse bread crumbs which have been browned in a little butter.

**SWEETBREAD AND MUSHROOM PATIES.**—Remove the fat and gristle from one sweetbread and boil. Let cool and cut in pieces about half an inch thick. Wash thoroughly half a pound of mushrooms and cook in an ounce of butter and a little lemon juice. When done add the sweetbreads, a little white sauce, and a little rich cream to be of proper consistency, with salt and pepper to taste, and let the mixture cool. Line the patty pans with rich puff paste and fill with the mixture, cover with the paste and bake for about twenty minutes in a slow oven. Serve very hot.

**NUT LOAF.**—Put through the food chopper sufficient nut meats to measure one and one-half cupfuls; almonds, English walnuts, hazel and hickory nuts may be used in any proportions according to taste, also butternuts and black walnuts, but the latter should be taken in sparing quantity because of their pronounced flavor; add to the chopped nuts one pint of stale bread crumbs, one teaspoonful of salt and one teaspoonful of any preferred sweet herbs; mix well, add sufficient boiling water to moisten, cover closely and let stand for ten minutes to swell; now add another cupful of hot water and turn into a well-greased loaf pan; bake for an hour in a moderate oven and serve hot with a brown sauce, or it may be cooled and served sliced with mayonnaise.

**FISH SMOTHER.**—Select a plump, good-sized fish, about three pounds, cod or haddock preferred; cut into pieces one-half the size of an ordinary cutlet; let fish lay in cold salted water until the other ingredients are being prepared; take half cup of bacon, cut into dice and fry out to a crisp brown in the kettle in which the smother is to be cooked; mince one medium-sized onion and partially fry in fat, then add the fish and pour over all enough cold water to cover; add a teaspoonful of salt and one very small pepper if you have it. Be very careful not to boil the fish so that it will fall apart. It should simmer; each piece should remain intact upon serving. Just before removing from the fire sprinkle one-quarter cupful of cornmeal over the smother and one cup of milk or cream; boil five minutes. It is then ready to serve.

**CHICKEN SALAD.**—One chicken weighing about three pounds, one pint of mayonnaise, one large cupful of chopped celery, and one cup of French dressing made of two small cupfuls of oil, one cupful of vinegar and fine salt and white pepper in the proportion liked. Cook the chicken in as little water as possible until it is tender, but not until it begins to fall apart. Season with salt and pepper. Drain off the juice, let the chicken cool, and cut the meat into small dice. "Marinate" the chicken as follows: Mix the French dressing by stirring the oil, salt and pepper slowly together, then a little at a time add the vinegar. Put the pieces of chicken in a large bowl and pour the French dressing over them. Let this stand in a cool place two hours, turning over the contents occasionally to keep the whole saturated with the liquid. Drain off the French dressing, mix the celery with the chicken, and stir in enough mayonnaise to flavor the whole. Serve in a large, deep dish, covering the top with mayonnaise. If capers are liked a few of these may be mixed in when the celery is added. The object of allowing the chicken to remain in the French dressing before making into a salad is to give a sharper flavor to the mixture, as plain chicken salad does not have a sufficiently acid flavor for some tastes. Veal is sometimes

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substituted for chicken in this salad, and if the meat is tender it is liked almost as well.

### Hints to Housekeepers.

Various preparations of cream are usually combined with desserts made of rhubarb, and tend to modify the sharp flavor of the fruit. The cream should be added just before serving, as if left to stand with the acid the cream may break.

To make a nice vegetable stew, pick and wash very clean as much spinach as will make a dish; mince finely three small onions, pick and chop two handfuls of parsley; pour all into a saucepan, with rather more than half a pint of gravy, a bit of butter dusted with flour, a little salt and pepper. Cover the pan closely, stir it now and then, and when the spinach is tender mash smooth; serve it with slices of broiled ham, or with sausages.

A correspondent asks how ermine that is slightly soiled may be cleaned without sending it to the furrier, where its handling will be expensive. Naphtha will clean it excellently, but the process is rather a risky one. If undertaken out of doors and on not too cold a day, when sometimes the air is so charged with electricity that a little rubbing will produce a spark, there should be no trouble. Put a half-gallon of naphtha in a foot tub, and immerse the fur collar, muff, or whatever it may be, lifting it in and out several times, and rubbing any soiled spots. Dry in the sun—a part of the process which is necessary.

If there are still people who have to use coal stoves and work over ashes, here is a little convenience which they will find invaluable. It is a gardener's three-tined fork—not a foot long, handle and all. A man who looks after his own fires in a few rooms in a big, old-fashioned house, uses one of these forks, keeping it always in the hod to push the coal up on to the shovel and to separate pieces of coal from clinkers in the ashes. He makes use of it in so many ways that he feels that it would be difficult now to do without it. A little fork of this kind will cost probably 10 cents.

### How to Make Sugar Syrup.

TO THE EDITOR:—Can you tell me how to make a good quality of table syrup from granulated sugar? I find that by adding just enough water to reduce the sugar to the proper consistency for syrup it soon granulates again. If more water is added the syrup is too thin.—SUBSCRIBER, Kelseyville.

She—I know some couples that quarreled a good deal at first, but got along pretty well later on. He—Oh, yes! Some people take matrimony like rheumatism—they get so they don't complain much.

"Gobang's wife is a deaf mute, but he says she is worth her weight in gold." "Perhaps it is her silence that is golden."

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## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, April 23, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday.....	74 1/4 @ 73 1/4	75 1/4 @ 74 1/4
Thursday.....	73 1/4 @ 73 1/4	74 1/4 @ 74 1/4
Friday.....	74 1/4 @ 73 1/4	76 @ 74 1/4
Saturday.....	74 1/4 @ 74 1/4	75 1/4 @ 75 1/4
Monday.....	75 1/4 @ 74 1/4	76 1/4 @ 75 1/4
Tuesday.....	75 1/4 @ 73 1/4	76 1/4 @ 75 1/4

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday.....	43 1/4 @ 42 1/4	35 1/4 @ 35 1/4
Thursday.....	43 @ 43 1/4	35 1/4 @ 36
Friday.....	44 @ 43	36 1/4 @ 35 1/4
Saturday.....	43 1/4 @ 43	36 @ 35 1/4
Monday.....	43 1/4 @ 42 1/4	36 1/4 @ 35 1/4
Tuesday.....	42 1/4 @ 43 1/4	35 1/4 @ 36 1/4

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 11 1/4 @ 1 11 1/4	1 08 1/4 @ 1 08 1/4
Friday.....	1 11 1/4 @ 1 10 1/4	1 08 1/4 @ 1 07 1/4
Saturday.....	1 11 1/4 @ 1 11 1/4	1 08 1/4 @ 1 08 1/4
Monday.....	1 11 @ 1 11 1/4	1 08 1/4 @ 1 08 1/4
Tuesday.....	1 12 1/4 @ 1 11 1/4	1 08 1/4 @ 1 08 1/4
Wednesday.....	1 12 @ 1 12 1/4	1 09 1/4 @ 1 10

## WHEAT.

Another very quiet week has been experienced since last review in the wheat trade in this center. There has been very little wheat offering here at any time the current month, and prospects do not appear encouraging for any great amount of activity during the balance of the season. Most holders of California wheat are making no effort to realize. There has been practically no Oregon or Washington wheat offering in this center the current season. Eastern and foreign markets were moderately firm most of the week, but there was no noteworthy activity reported. Cold and dry weather in the great wheat belt tributary to Chicago was made the basis of firmness in that center. In Great Britain there was considerable strength displayed in values for spot holdings in consequence of the revival of duty on wheat and flour to increase the Government revenue and help defray the immense cost of the war in South Africa. Of course, this tax makes the gap in values between producer here and foreign consumer that much wider than before, and is a detriment to both. Values in the local market were maintained about as last quoted for spot wheat. Despite the very limited offerings, neither shippers nor millers showed inclination to materially advance their bids. Very few grain charters are being effected. Ocean freight rates are fairly steady at 23s 9d to 25s, as to size of ship, for usual trip to Europe. Local wheat market closed quite firm, in sympathy with a strong advance in Chicago.

California Milling.....	1 12 1/4 @ 1 15
Cal. No. 1 shipping, alongside.....	1 10 @ 1 12 1/4
Oregon Valley.....	1 10 @ 1 12 1/4
Washington Blue Stem.....	1 10 @ 1 15
Washington Club.....	1 07 1/4 @ 1 10
Off qualities wheat.....	1 15 @ 1 07 1/4

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	6s 1 1/4 d @ 6s 2 d	6s 3 1/4 d @ 6s 4 d
Freight rates.....	35 @ 36 1/4 s	23 1/4 @ 25 s
Local market.....	97 1/4 @ 1 01 1/4	1 10 @ 1 12 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.11 @ 1.12 1/4.
December, 1902, delivery, \$1.07 1/2 @ 1.10.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.09 1/2 @ 1.10; May, 1902, \$1.12 @ 1.12 1/4.

## FLOUR.

Business in this line is not of heavy volume, either on export account or locally. Values remain without quotable change, but buyers are not readily found to take hold in a wholesale way at full current figures. Spot supplies are fairly liberal, not only of local product, but also of importations from near-by States and Territories.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

## BARLEY.

Market has been rather quiet the current week. Values have continued at a more than ordinarily narrow range, feed descriptions commanding close to prices obtainable for brewing and export barley. There is very little going aboard ships for Europe at present, exporters not being able to purchase in noteworthy quantities at the figures they name. Business in feed descriptions is not so brisk, either for shipment or on local account, as it was earlier in the month, but is still of fair volume. Speculative trading was light and there were no marked fluctuations in prices on Call Board, but the general drift of values was to lower levels.

Feed, No. 1 to choice.....	95 @ 96 1/4
Feed, fair to good.....	92 1/4 @ 95
Brewing, No. 1 to choice.....	98 1/4 @ 98 3/4
Chevalier, No. 1 to choice.....	1 10 @ 1 15
Chevalier, poor to fair.....	95 @ 1 05

## OATS.

Movement is of a light order, buyers in most instances operating very slowly at full current rates. While quotable values are without appreciable change, there has been some disposition shown to grant moderate concessions to buyers rather than miss sales, more particularly on the higher priced grades, the tendency being to a narrower range of values than lately current.

White Oats, fancy feed.....	1 37 1/4 @ 1 40
White, good to choice.....	1 32 1/4 @ 1 37 1/4
White, poor to fair.....	1 27 1/4 @ 1 30
Gray, common to choice.....	1 27 1/4 @ 1 35
Milling.....	1 35 @ 1 40
Surprise, good to choice.....	1 40 @ 1 45
Black Russian.....	1 15 @ 1 27 1/4
Red.....	1 22 1/4 @ 1 37 1/4

## CORN.

Not much coming forward, neither is the quantity on hand of large proportions. At the same time, there is more offering than prompt custom can be secured for at full current figures. Large White is in better supply than Yellow, and values for the latter are being best sustained. Seriously damp and defective corn will not bring quotations, and at comparatively low figures meets with slow sale.

Large White, good to choice.....	1 45 @ 1 50
Large Yellow.....	1 35 @ 1 45
Small Yellow.....	1 40 @ 1 50

## RYE.

No new developments to record, either in quotable values or general tone of the market. Offerings and demand are both light.

Good to choice.....	92 1/4 @ 95
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## BUCKWHEAT.

Not enough doing in this cereal to clearly define values. Quotations are based on latest reported transactions.

Good to choice.....	1 55 @ 1 70
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## BEANS.

Business is not brisk, there being no active demand at the moment for beans of any description, either for local use or for shipment. Eastern markets are fairly stocked and quiet and are lacking in firmness. The offerings here are larger of Lady Washingtons and Small Whites than of any other varieties, and are not readily placed to advantage. Market for Limas is quiet and easy at the recent decline, although of this variety there are no heavy spot supplies. Values for colored beans are in the main showing steadiness. Bayos are being held as a rule with decided confidence. Black-eyes are in scanty stock and are likely to be until next crop begins to come forward.

Pea, fair to good, 100 lbs.....	3 25 @ 3 50
Small White, good to choice.....	1 90 @ 2 10
Lady Washington.....	2 00 @ 2 15
Pinks.....	1 85 @ 2 00
Bayos, good to choice.....	2 40 @ 2 60
Reds.....	2 25 @ 2 50
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	3 40 @ 3 50
Black-eye Beans.....	4 50 @ 4 75
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

## DRIED PEAS.

Little doing in either variety. For other than strictly choice it is difficult to secure custom, even at concessions to buyers. Stocks of Green or Blue are heavier than of Niles or field peas.

Green Peas, California.....	1 50 @ 2 00
Niles Peas.....	1 75 @ 1 80

## WOOL.

Most of the purchasing of spring wool continues to be done in the interior. In many instances relatively higher prices have been lately paid in the interior than were obtainable or quotable here. Good to choice spring wools of current clip could be readily placed in the local market within range of quotations, but there has not been enough of this description offering in this center to permit of any noteworthy business being transacted. Middle county and northern Sacramento Valley wools are just beginning to arrive in wholesale fashion.

## SPRING.

Northern Cal., free.....	15 @ 16 1/4
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	12 @ 15

## HOPS.

Nothing doing in 1901 hops in a wholesale way in the local market. There are few offerings and these are not meeting with any attention worth mentioning. The wholesale market is not quotable over 16c., although jobbers quote up to 17c. The contracting being done for new crop hops to arrive is within range of 10 @ 12 1/2c., latter figures only for select Sonoma or Oregon. Eastern advices of recent date report the Eastern market as follows: "While the demand does not show much force there is a fair business doing for the season of year, and the reduction in stocks goes on in a pretty satisfactory manner. We have heard of a few sales this week between dealers, and brewers have shown enough interest to warrant the belief that they are not carrying large supplies, and are inclined to provide somewhat against future needs. This has given added strength to the position, and there is an exceedingly firm feeling throughout. State hops are getting very scarce and there are practically no more to be had in the interior. A very nice growth sold here at 18 1/2c., and at the present writing 19c. is an inside rate for choice, with other grades crowding close up to the top. Pacifics are held stronger in sympathy with States, and our revised quotations, 15 @ 17 1/2c. for common to prime 1901 crop, and 18 @ 19c. for choice, cover late transactions. Buyers have been looking for yearlings, and they seem to be closed up better than for many years. No complaints of a serious character have come from the hop growing sections of this country, and it is believed that the vines have wintered well."

## HAY AND STRAW.

This market shows much the same condition as for a week or two preceding, and that there will be any radical changes developed in the near future does not appear probable. Demand is not very active, but is sufficient to absorb the bulk of offerings about as rapidly as received, especially of the most desirable qualities of both stable and cow hay. Straw is not arriving very freely, but there is enough for the immediate demand.

Wheat, good to choice.....	9 00 @ 11 50
Wheat and Oat.....	8 50 @ 11 50
Oat, good to choice.....	8 00 @ 10 50
Alfalfa.....	8 00 @ 11 00
Clover.....	7 00 @ 9 00
Compressed.....	9 00 @ 11 50
Straw, 3 bale.....	40 @ 55

## MILLSTUFFS.

Most kinds of mill offal, and more particularly Bran, continued to be rather firmly held, under limited offerings, but demand was not active and only in a small way were extreme current figures obtainable. Prices for Rolled Barley and Milled Corn were practically unchanged, with only a moderate movement.

Bran, 3 ton.....	15 50 @ 17 00
Middlings.....	18 00 @ 20 00
Shorts, Oregon.....	16 00 @ 18 00
Barley, Rolled.....	20 00 @ 21 00
Cornmeal.....	28 50 @ 29 50
Cracked Corn.....	29 00 @ 30 00

## SEEDS.

Flaxseed is arriving in moderate quantities from the north, mostly under contract to the oil works. Mustard is in fair supply for this advanced date in the season, with offerings largely of the Brown or Trieste variety. Alfalfa is practically out of stock and is not quotable. In Bird Seed there is not much doing and in quotable values for the same there is no change.

	Per ctl.
Alfalfa, Cal.....	— @ —
Alfalfa, Utah.....	— @ —
Flax.....	2 25 @ 2 50
Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 50 @ 2 65
Canary.....	3 1/4 @ 3 1/4
Rape.....	1 1/4 @ 2 1/4
Hemp.....	3 1/4 @ 3 1/4

## BAGS AND BAGGING.

The Grain Bag market remained practically as previously quoted, being steady, but quiet. There is a little business doing in Wool Sacks, the supply proving equal to the demand and no change to note in prices.

Calcutta Grain Bags, buyer June-July.....	6 1/4 @ 6 1/4
Calcutta Grain Bags, spot.....	6 @ 6 1/4
San Francisco Grain Bags, 22x36, spot.....	6 @ 6 1/4
San Quentin Bags, 30x40.....	5 55 @ —
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	8 1/4 @ —
Gunnies.....	— @ —

Bean Bags.....	5 1/4 @ 5 1/4
Fruit Sacks, cotton, three sizes.....	5 1/4 @ 6 1/4
Fruit Sacks, Jute.....	7 @ 7 1/4

## HIDES, PELTS AND TALLOW.

Sound Hides are in fair request at prevailing values, but market is weak and dull for grubby stock. Pelts are selling within same range of values current for some weeks past. Tallow is ruling steady, desirable offerings meeting with tolerable prompt custom at values quoted.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 50 lbs.....	10 1/4 @ —	8 1/4 @ —
Medium Steers, 48 to 50 lbs.....	9 @ —	7 1/4 @ —
Light Steers, under 48 lbs.....	8 @ —	7 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	7 @ —
Light Cow Hides, under 50 lbs.....	8 @ —	7 @ —
Stags.....	6 @ 6 1/4	— @ —
Wet Salted Kip.....	8 @ —	7 @ —
Wet Salted Veal.....	9 @ —	7 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ —	14 @ —
Dry Kip and Veal, 11 to 16 lbs.....	14 @ —	12 @ —
Dry Calf, under 4 lbs.....	17 @ —	15 @ —
Salted Horse Hides, large.....	2 75 @ —	— @ —
Salted Horse Hides, medium.....	2 25 @ —	2 50 @ —
Salted Horse Hides, small.....	1 25 @ —	— @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, medium.....	1 50 @ —	— @ —
Dry Horse Hides, small.....	1 00 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 3/4 skin.....	80 @ —	20 @ —
Pelts, medium, 3/4 skin.....	65 @ —	75 @ —
Pelts, short wool, 3/4 skin.....	40 @ —	60 @ —
Pelts, shearling, 3/4 skin.....	15 @ —	30 @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good medium.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	30 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/4 @ —	— @ —
Tallow, No. 2.....	4 1/4 @ —	4 1/4 @ —
Goat Skins, perfect.....	30 @ —	37 1/2 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

## HONEY.

While spot stocks and offerings cannot be termed heavy, there is more on market than immediate custom can be found for at full current figures. With the new season near at hand and prospects for a good crop, buyers are not disposed to stock up to any noteworthy extent at present.

Extracted, White Liquid.....	5 @ —
Extracted, Light Amber.....	4 1/4 @ —
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	10 @ 12 1/4
Amber Comb.....	7 @ 10
Dark Comb.....	6 @ 7

## BEESWAX.

Stocks and offerings are of small proportions, admitting of no extensive or wholesale operations.

Good to choice, light, 3 lb.....	25 @ 28
Dark.....	24 @ 25

## LIVE STOCK AND MEATS.

Beef is not in excessive supply and prime to choice is in fair demand at full current figures. Mutton is ruling steady, and market gives no evidence of probability of much fluctuation in prices in the near future. Of either Veal or Lamb there were no large quantities offering, and both met with a tolerably firm market. Hog market was without radical change, either as to quotable values or tone, showing generally healthy condition, with choice medium weights slightly higher.

Beef, first quality, dressed, net 3 lb.....	7 @ 7 1/4
Beef, second quality.....	7 @ —
Beef, third quality.....	6 @ 6 1/4
Mutton—ewes, 8 @ 8 1/4; wethers.....	8 1/4 @ 9
Hogs, hard grain fed, 125 to 200 lbs.....	6 1/4 @ 6 1/4
Hogs, small, fat.....	6 1/4 @ 6 1/4
Hogs, large, hard, over 200 lbs.....	5 1/4 @ 6
Hogs, soft or acorn fed.....	5 1/4 @ —
Hogs, country dressed.....	7 1/4 @ 7 1/4
Veal, small, 3 lb.....	8 @ 9 1/4
Veal, large, 3 lb.....	8 @ 9
Lamb, spring, 3 lb.....	11 1/4 @ —

## POULTRY.

The demand for California poultry was less active and prices averaged lower than for a week or two preceding, Eastern being in a little better supply, enabling buyers to bear the market for home product. For other than choice young stock there was not much inquiry. Big Broilers in fine condition, Fat Fryers and large Young Roosters showing no signs of spurs were given the preference.

Turkeys, dressed, choice.....	15 @ 17
Turkeys, alive, Hens, 3 lb.....	15 @ 16
Turkeys, alive, Gobblers, 3 lb.....	14 @ 15
Hens, California, 3 dozen.....	4 00 @ 5 50
Roosters, old.....	4 00 @ 4 50
Roosters, young (full-grown).....	6 50 @ 7 50
Fryers.....	5 00 @ 6 00
Broilers, large.....	4 00 @ 4 50
Broilers, small to medium.....	1 50 @ 3 00
Ducks, old, 3 dozen.....	4 50 @ 5 00
Ducks, young, 3 dozen.....	7 00 @ 8 00
Geese, 3 pair.....	1 50 @ 1 75
Goslings, 3 pair.....	2 25 @ 2 50
Pigeons, old, 3 dozen.....	1 50 @ 1 75
Pigeons, young.....	2 00 @ 2 25

## BUTTER.

Seldom has the market been at this time of year in such good shape for the producing interest. Nearly all the surplus



butter up to date has been promptly absorbed by shipping demand, and there is still considerable going outward. Indications are that prices have touched bed-rock for the season.

Creamery, extras, # 10.....	19	@20
Creamery, firsts.....	18	@19
Creamery, seconds.....	—	@—
Dairy, select.....	18	@19
Dairy, firsts.....	17	@18
Dairy, seconds.....	—	@—
Mixed store.....	15	@16
Creamery in tubs.....	—	@—
Pickled Roll, # 1b.....	—	@—
Firkin, California, choice to select.....	—	@—
Firkin, common to fair.....	—	@—

#### CHEESE.

There is more than enough new domestic offering to accommodate the immediate demand, and market inclines in favor of buyers. Old is not plentiful and is steadily held. Eastern cheese market is firm and very lightly stocked.

California, fancy flat, new.....	9 1/2	@10
California, good to choice old.....	9 1/2	@10 1/2
California, fair to good.....	—	@ 9 1/2
California, "Young Americas".....	9	@10 1/2

#### EGGS.

Tendency has been to a little more firmness, particularly for strictly choice to select, coming direct from hennery or ranch. Ordinary ranch and store-gathered eggs are not being so eagerly sought after at extreme current rates for these descriptions as they were earlier in the month.

California, select, large, white and fresh.....	16	@—
California, select, irregular color & size.....	15	@15 1/2
California, good to choice store.....	14	@15
California, common to fair store.....	—	@—
Eastern, good to choice.....	—	@—
Cold Storage.....	—	@—

#### VEGETABLES.

There were tolerably liberal receipts of fresh vegetables in season, and while there were no radical changes in quotable values the general tendency of the market was in favor of the consuming interest. Asparagus, Green Peas and Rhubarb made the largest display. In the line of old vegetables, Onions were about the only kind offering in noteworthy quantity. Choice were in the main very steadily held. Not many Onions are arriving, but there are fair supplies in store, both of Oregon and Australian product.

Asparagus, # box.....	1 25	@2 50
Beans, String, # 1b.....	10	@ 12 1/2
Beans, Wax, # 1b.....	10	@ 12 1/2
Cabbage, choice garden, # 100 lbs.....	50	@—
Cauliflower, # dozen.....	—	@—
Cucumbers, Bay, # large box.....	—	@—
Egg Plant, Los Angeles, # 1b.....	15	@ 20
Garlic, # 1b.....	1 1/2	@ 2 1/2
Mushrooms, # 1b.....	—	@—
Onions, Yellow Danver, # cental.....	1 50	@2 50
Peas, Sweet garden, # 1b.....	2	@ 2 1/2
Peppers, Green, Los Angeles, # 1b.....	10	@ 12 1/2
Peppers, Bell, # box.....	—	@—
Rhubarb, # box.....	50	@ 75
Squash, Marrowfat, # ton.....	20 00	@25 00
Summer Squash, # box.....	1 00	@ 1 25
Tomatoes, # box.....	1 00	@ 1 50

#### POTATOES.

Firmness of the market for desirable old potatoes is fully as pronounced as at any previous date the current month. Stocks and offerings of old at present are mainly Oregon product. Desirable qualities are meeting with very good demand within range of the quotations below noted. New potatoes are showing increased receipt, but the quantity is too small and the potatoes not sufficiently ripe to admit of filling any shipping orders. Good to choice new are bringing in a limited way on local account very good figures. Sweet potatoes are still on market and are being held about as last quoted.

Burbanks, Salinas, # 100 lbs.....	—	@—
River Burbanks in sacks, # cental.....	1 30	@1 55
Petaluma and Tomales Burbanks.....	1 40	@1 60
Oregon Burbanks.....	1 40	@1 85
River Reds.....	1 40	@1 50
New Potatoes, # 1b.....	2	@ 2 1/2
Sweets, Merced, # cental.....	1 90	@2 00

#### The Fruit Market.

#### FRESH FRUITS.

Apples are still on market, mainly cold storage holdings, which are being dealt out sparingly, just in about sufficient quantity to satisfy the immediate positive inquiry. Asking figures for Apples are without quotable change. Strawberries showed increased receipt and ruled lower, but stocks were by no means heavy. Cherries are expected to put in an appearance in quotable quantity the coming week. Early arrivals of ripe Cherries will very likely bring decidedly good prices.

Apples, # fancy, 4-ter box.....	2 00	@2 50
Apples, good to choice, # 50-lb. box.....	1 25	@1 75
Apples, common to fair, # 50-lb. box.....	75	@1 00
Strawberries, Longworth, # chest.....	7 00	@13 00
Strawberries, Malinda, # chest.....	4 00	@6 00

#### DRIED FRUITS.

Business in the line of transfers from second hands has been of very fair proportions during the week under review.

With virtually nothing offering from growers, trade is necessarily restricted to jobbing operations. Stocks in the hands of dealers show material reduction. The movement outward has been mainly of assorted carloads. Stocks have been depleted to such an extent that it is about impossible at this date to fill orders for assorted cars and give such assortment as generally desired. Prices are without marked change, but are being in the main well sustained, especially when the advanced date of the season is considered, the good prospects for a heavy fruit crop this summer, and the general desire to close out all present holdings before the new season opens. No particular changes in prices for remaining stocks of 1901 fruit are now looked for, but it is possible that slightly firmer figures may prevail in the filling of small orders, owing to supplies being of slim proportions and mainly in few hands. Stocks of prunes of last crop have been reduced to such small proportions as not to admit of filling noteworthy orders for the four sizes. Prunes of 1901 crop—50s to 80s—are still offering in considerable quantity on the 2 1/2 @ 3c. basis, latter figure for Santa Claras.

#### EVAPORATED OR BLEACHED.

Apricots, Royal, choice, in sacks, # 1b.....	9	@10
Apricots, Moorpark.....	10	@12
Apples, in 50-lb boxes, rings, pressed, fancy.....	8 1/2	@ 9
Apples, 50-lb boxes, rings, pressed, good to choice.....	7 1/2	@ 8 1/2
Nectarines, # 1b.....	5	@ 6
Peaches, unpeeled, fancy.....	8	@ 9
Peaches, unpeeled, choice.....	6 1/2	@ 7 1/2
Peaches, peeled, in boxes.....	12	@14
Pears, halves, fair to choice.....	6 1/2	@ 7
Plums, Red and Black, pitted.....	5	@ 6
Plums, White and Yellow.....	5	@ 6
Prunes, 4 sizes, in bags, —@—; 50-80s, 4 1/2 @ 4 3/4 c; 80-70s, 4 @ 4 1/4 c; 70-80s, 3 1/2 @ 3 3/4 c; 80-90s, 3 @—; 90-100s, 2 1/2 @—; these figures for 1901 crop.		

#### COMMON SUN-DRIED.

Apples, sliced.....	4	@ 5
Apples, quartered.....	5 1/2	@ 5 1/2
Peaches, unpeeled.....	6	@ 6 1/2
Pears, prime halves.....	5	@ 5 1/2
Plums, unpitted, # 1b.....	1 1/2	@ 2 1/2

#### RAISINS.

Stocks and movement are both light. On 2 and 3-crown loose Muscatels there has been some shading in rates to effect a clean-up of this stock. These and seeded raisins of same grades constitute the bulk of present offerings.

Following are the prices for 1901 crop in carload lots:		
Loose Muscatels—	Per lb.	
4-crown.....	6 1/2	@ 6
3-crown.....	5 1/2	@ 6
2-crown.....	5 1/2	@ 5 1/2
Seedless Muscatels.....	—	@—
Seedless Sultanas.....	5 1/2	@ 6
Thompson's Seedless, bleached.....	8 1/2	@ 9 1/2
Seeded—		
1-lb. carton.....	7 1/2	@ 8
12-oz. carton.....	6 1/2	@ 6 1/2
London Layers, 20-lb. boxes—		
2-crown.....	—	@—
3-crown.....	—	@—

#### CITRUS FRUITS.

Orange market was more liberally stocked than preceding week and presented an easier tone. Inquiry was mainly for medium size Navels of choice to select quality and prevailing values were best sustained for this class. Lemons were held about as last quoted, but movement was light and for other than choice to select the market was devoid of firmness. Limes were without quotable change. A fresh invoice from Mexico is due at this writing.

Oranges—Navels, # box.....	1 50	@3 50
Mediterranean Sweet.....	1 50	@2 25
Seedlings, # box.....	1 25	@2 00
Tangerine, quarter box.....	1 00	@1 25
Lemons—California, select, # box.....	2 25	@2 75
California, good to choice.....	1 50	@2 00
California, common to fair.....	1 00	@1 50
Grape Fruit, # box.....	1 25	@2 50
Limes—Mexican, # box.....	4 50	@5 00

#### NUTS.

Almonds are in scanty supply and market is firm. Prospects are that coming crop will meet with a good demand at good figures. Walnuts are not now obtainable in large quantity and choice are being very firmly held. The movement in Peanuts is light at quotably unchanged values.

California Almonds, shelled.....	16	@19
California Almonds, paper shell, # 1b.....	12	@13
California Almonds, soft shell.....	9	@10
California Almonds, hard shell.....	5	@ 6
Cal. White Walnuts, No. 1 soft shell.....	10	@12
Cal. White Walnuts, No. 2 soft shell.....	8	@10
Cal. White Walnuts, No. 1 hard shell.....	9	@10
Cal. White Walnuts, No. 2 hard shell.....	7	@ 8
Peanuts, California, fair to prime.....	4 1/2	@ 5 1/2
Peanuts, Eastern, hand-picked.....	5 1/2	@ 6 1/2
Pine Nuts.....	5	@ 6

#### WINE.

The market continues quiet, as far as wholesale trading is concerned, there being no special or undue pressure on the part of growers to realize, and no active inquiry on the part of dealers to operate at full current figures in anything like extensive fashion. Values for dry wines of

last year's vintage are ruling fairly steady at the quotable range of 22@26c per gallon for good to select. Shipments by sea from this port in March to all points excepting Hawaiian Islands footed up 1,247,570 gallons and 329 cases, valued at \$458,230. Shipments by sea in March, 1901, were 592,315 gallons and 1,014 cases, valued at \$204,295.

#### Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	86,887	5,477,799
Wheat, centals.....	113,292	8,819,879
Barley, centals.....	52,537	5,670,568
Oats, centals.....	8,011	754,027
Corn, centals.....	6,120	99,211
Rye, centals.....	2,575	266,081
Beans, sacks.....	7,454	647,620
Potatoes, sacks.....	16,752	1,212,019
Onions, sacks.....	537	179,192
Hay, tons.....	2,657	122,913
Wool, bales.....	2,659	52,869
Hops, bales.....	40	8,820

#### EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	53,576	3,826,626
Wheat, centals.....	114,995	8,181,068
Barley, centals.....	253	4,036,418
Oats, centals.....	21	3,603
Corn, centals.....	199	9,387
Beans, sacks.....	199	23,604
Hay, bales.....	45	14,400
Wool, pounds.....	—	545,331
Hops, pounds.....	—	492,800
Honey, cases.....	2	6,062
Potatoes, pack's.....	155	46,662

#### California Dried Fruit at New York.

NEW YORK, April 23.—Evaporated apples, common, 7@8 1/2 c; prime wire tray, 9@9 1/2 c; choice, 9 1/2 @10 c; fancy, 10 1/2 @11 c.  
California Dried Fruits.—Demand fair, stocks light, and prices are being well maintained.  
Prunes, 3 1/2 @7 c.  
Apricots, Royal, 10@13 c; Moorpark, 11@14 c.  
Peaches, unpeeled, 8@10 c; peeled, 14@18 c.

#### New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR WEEK ENDING APRIL 8, 1902.

696,932.—VOTING MACHINE—A. J. Roling, S. F.	
697,395.—VEHICLE—F. Bosch, Crescent City, Cal.	
697,323.—PENCIL SHARPENER—E. Burke, Lakeview, Or.	
697,203.—MITER BOX—R. H. Dorn, Los Angeles, Cal.	
696,961.—OIL BURNER—Lizzie C. Graessie, San Jose, Cal.	
697,084.—HYDRANT—W. Henderson, Los Angeles, Cal.	
697,065.—SMOKE PREVENTER—J. H. Hobart, Denver, Colo.	
697,087.—WIRE BED BOTTOM—J. Hoey, S. F.	
697,088.—THRESHER FEEDER—M. I. Howe, Stockton, Cal.	
697,257.—READING STAND—J. Kriwanek, S. F.	
697,093.—VAPORIZER—G. H. Larkin, S. F.	
697,376.—MECHANICAL DIRECTORY—G. W. Maxwell, Los Angeles, Cal.	
697,377.—MECHANICAL DIRECTORY—G. W. Maxwell, Los Angeles, Cal.	
697,378.—MECHANICAL DIRECTORY—G. W. Maxwell, Los Angeles, Cal.	
697,379.—MECHANICAL DIRECTORY—G. W. Maxwell, Los Angeles, Cal.	
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697,381.—MECHANICAL DIRECTORY—G. W. Maxwell, Los Angeles, Cal.	
697,382.—MECHANICAL DIRECTORY—G. W. Maxwell, Los Angeles, Cal.	
697,388.—WASHER FASTENER—J. W. Shaw, Berryessa, Cal.	
697,181.—BODY WARMER—R. E. Smith, Portland, Or.	
697,032.—TRUSS—T. C. Spelling, S. F.	
697,038.—CAN TOP—J. B. Stewart, Chico, Cal.	
697,183.—SUGAR PADDLE—C. Stout, Pomona, Cal.	
697,324.—VEHICLE REACH—Travis & Denny, Medical Lake, Wash.	
697,296.—WATER ELEVATOR—G. R. Tyler, Pomona, Cal.	
697,120.—JEWELERS' TOOL—R. H. Wade, Elma, Wash.	
697,054.—PULLEY KEY—F. Wiggins, Tacoma, Wash.	
697,058.—HARROW TOOTH FASTENER—Glenn & Porteous, Fresno, Cal.	
697,059.—CULTIVATOR—Glenn & Porteous, Fresno, Cal.	
697,042.—ROASTING FURNACE—L. T. Wright, Keswick, Cal.	

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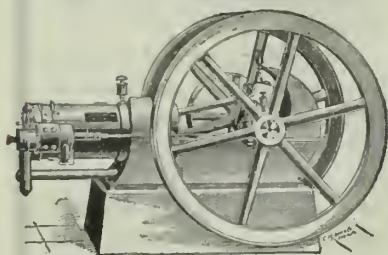
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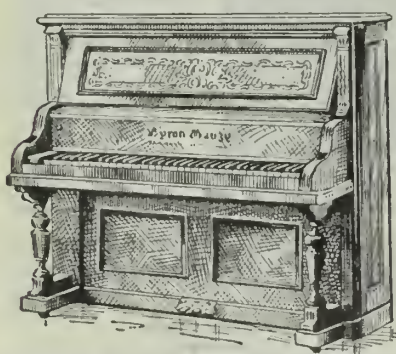
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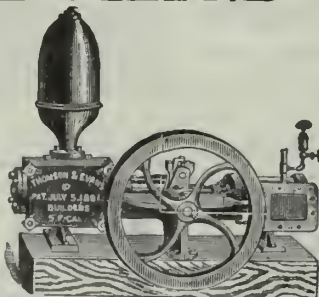
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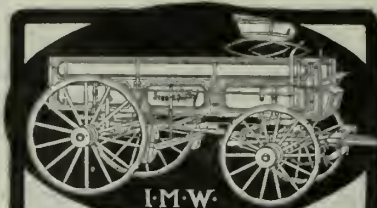
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Weighs 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet.  
Best Range made. WM. G. WILLARD, Manufacturer, 619 N. Fourth St.,  
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Indeed the Studebaker wagon  
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# THE VETERINARIAN.

Anthrax—Its Symptoms, Dissemination and  
Prevention.

Written for the Rural Northwest by PROF. EMILE  
F. PERNOT, Bacteriologist, Oregon  
Experiment Station.

Anthrax, or splenic fever, is an in-  
fectious germ disease among cattle,  
horses, sheep, goats and sometimes  
swine. It is caused by the presence of  
a specific germ which has the power of  
producing a spore, or seed, when con-  
ditions unfavorable to its growth are  
met with. These spores are very re-  
sistant to the action of the elements;  
they are not destroyed by drying and  
can remain dormant in the soil for a  
great length of time, just as wheat or  
other seeds may remain in the granary  
and retain their vitality, until condi-  
tions become suitable for their germin-  
ation and growth.

The germs in question belong to the  
plant kingdom, and are the lowest form  
of plant life, containing but a single  
cell; they are so small that it requires  
a microscope of exceedingly high power  
to see them at all. A single bacillus of  
anthrax measures from 25000 to 25000  
of an inch, and for this reason they can  
not be detected in the dead animal, nor  
can their spores be seen upon forage  
plants or in water, so that when we  
consider their minuteness, it may read-  
ily be understood how great numbers  
of them may be carried from place to  
place, unseen.

MEANS OF INFECTION.—In traveling  
over the State, the carcasses or bones  
of animals are frequently seen on  
ranges and pastures where other cattle  
are feeding. If, perchance, one of  
these animals had died of anthrax, the  
carcass was devoured by scavengers.  
Coyotes and dogs not only satisfy their  
hunger in the vicinity of the carcass,  
but carry portions of the flesh and  
bones to remote places, a means of  
spreading the contagion, as each parti-  
cle of flesh and each drop of blood con-  
tains an immense number of the germs

or spores. Then, again, there are the  
buzzards that gorge themselves with  
carrion and fly, perhaps, 20 miles or  
more, lighting upon a pasture or range,  
and not infrequently vomiting a portion  
of what they have eaten. This rejected  
food is filled with spores and means a  
breaking out of the disease at some  
future time.

Another means of infection, and  
probably the most dangerous, is the  
result of spores being carried down a  
stream of water in which an animal  
that has died of anthrax has been left.  
These spores may be carried for miles  
down the stream, and at the time of  
high water may be scattered all over  
bottom-land pastures. The disease is  
likely to break out owing to the fact  
that the spores have been left on the  
forage plants as the water subsided  
and the stock fed upon it. Since this  
be true, then river bottoms and low-  
land pastures are much more danger-  
ous as feeding ground than the uplands.  
This also holds good in the case of any  
germ disease.

These facts cannot be ignored, and  
when the question arises as to a remedy  
for this state of things, the answer is  
that every stock owner should properly  
dispose of his dead animals. There are  
three methods in which this may be ac-  
complished. The first is by burying  
them deeply where they die, being  
careful not to remove the skin nor to  
draw any blood; the second, when  
plenty of fuel is at hand, to burn them,  
and the third method, when burning or  
burying is impracticable, is to cover  
the carcass with quicklime.

If an animal dies in a corral, the  
place should by all means be covered  
with fresh lime; this will kill the germs  
that may have escaped from the ani-  
mal, before or after death. Every car-  
cass that is properly disposed of means  
the destruction of countless germs of  
contagious diseases, and it becomes  
every man's duty to enforce such pre-  
cautionary measures.

MANNER OF INFECTION.—It has al-  
ready been stated that the spores,  
which may live for years, find their  
way to vegetation which is eaten by  
the animals. The spores, finding a  
suitable material to germinate in, give  
rise to the disease along the digestive  
tract, finally entering the circulation,  
where they rapidly multiply and pro-  
duce toxic poisons, which result in the  
death of the animal. Infection may  
also take place externally through  
abrasions in the skin, or from fly and  
insect bites, in which case swellings  
and carbuncles are formed. If these



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gall and chafing, and all forms  
of canker, callous, &c., are in-  
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Dear Sirs—I had a horse that had two bunches on his shoulder,  
caused by wearing a new collar. Less than one bottle of your Elixir  
cured it after six months' standing. L. W. FISHER.  
Cures also curb, splint, contracted cord, all forms of  
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Beware of so-called Elixirs—none genuine but Tuttle's.  
Avoid all blisters; they offer only temporary relief if any.

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Like other evils cramps and diarrhoea come  
suddenly. Promptly give a dose of Perry Davis'  
Painkiller and the pains will go immediately.  
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heal naturally, immunity will be produced, but if they do not heal and the bacilli enter the circulation, typical anthrax will result.

**SYMPTOMS.**—The symptoms vary according to the seat of the disease and susceptibility of the animal, so that if the spores or germs enter the system through the lungs, intestines or skin, the symptoms will vary accordingly. The worst form is when an animal drops dead without having previously shown any signs of disease, or it may be apparently well in the evening and found dead the following morning. This form generally occurs at the beginning of an outbreak, and is apoplectic.

In the acute form, which is the most common, there are no swellings externally. The disease begins with a high fever, the pulse is very rapid, chills and muscular tremors may appear. The ears and base of horns are cold and the hair rough and bristling. The animals become weak, dull and stupid. As the disease progresses, the symptoms may change to uneasiness, spasms of the limbs, pawing the ground and kicking. The breathing may become labored, with nostrils dilated, mouth open, head up, and the nose, mouth and all visible mucous membranes become bluish. If the disease is in the intestines, the animal shows signs of much pain by moaning. The discharges, which are at first firm, become softer and covered with serum, mucus and blood.

As the disease progresses, weakness increases and the animal lies down. Blood vessels may rupture and bloody discharges take place. Death follows in two or three days.

**POST MORTEM APPEARANCES.**—After an animal dies from anthrax the carcass, instead of becoming stiff, as in nearly all diseases, becomes limp, bloats and decomposes very rapidly. Upon opening the carcass, it will be found to have nearly all the organs blood-stained. The spleen will have become enlarged many times its normal size, very dark colored, soft and filled with a thick blood of a tarry consistency. More or less bloody fluid will be found in the abdominal and thoracic cavities. When the germ has entered externally as described, the swellings are flat, doughy tumors, and when cut open are found to consist of a jelly-like mass of a yellowish color, sometimes stained with blood. The carbuncles are firm and undergo mortification.

**TREATMENT AND PREVENTION.**—As to treatment, but little can be done, except in cases of tumors, which may be cut out and the wound thoroughly cleansed with carbolic acid and water in the proportion of one ounce carbolic acid to a quart of water. The sanitary precautions, in properly disposing of all dead carcasses, as already described, is the first and most important step as a prevention for all contagious germ diseases. The sick animals should be at once separated from the others, and if possible change the pasture and water supply of the ones not yet affected. Stock ought not to be allowed to drink from stagnant ponds, especially those frequently found in lowland pastures, because during the summer and fall the water becomes warm and the spores germinate and germs multiply; besides, the water evaporating concentrates the germs, making it much more dangerous.

Vaccination may be resorted to as a preventive, when the disease manifests itself in a vicinity, but unless it is properly performed with fresh, pure and reliable vaccine, there is more or less danger of producing the disease, instead of immunity, because animals vary in susceptibility. Double vaccination—that is, vaccinating with a weak vaccine first, and repeating the opera-

tion after ten or twelve days with a stronger one, is safer and more effective than giving a normal dose at once.

**DANGER TO MAN.**—In dissecting or handling an animal that has died of anthrax, care should be taken that there be no cuts or abrasions of the skin on the hands, for there is danger of the germs, or spores, of anthrax entering and being taken up by the circulation, producing malignant carbuncles. The digestive tract or respiratory organs are very seldom affected.

Anthrax has not yet obtained a firm foothold in Oregon, so it behooves every stock owner to investigate the cause of the death of any animal, and if he can not determine the cause, the experiment station will diagnose the case, if a portion of the spleen or any other apparently diseased part of the anatomy is sent, accompanied by a description of the symptoms.



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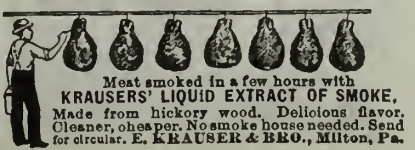
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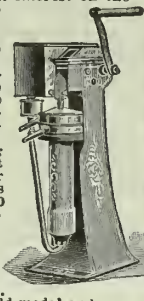
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## Patrons of Husbandry.

### Tulare Grange.

To THE EDITOR:—The regular meeting of Tulare Grange was held at its hall on the 19th. The first and second degrees were conferred on a class of two and three were elected to receive the degrees.

The Grange voted to hold its annual picnic on Saturday, the 26th of this month, on the grounds of D. K. Zumwalt, 3 miles north of Tulare. A committee of three was appointed to prepare the grounds, and the secretary was requested to notify Selma and Giant Oak Granges and ask them to join with us. A general invitation is given to all farmers and friends of the order to bring their lunches and join in a day of recreation.

The committee having it in charge were requested to arrange place and programme for Children's Day.

The subject of the day, "Success is More Dependent Upon Ability Than Upon Opportunity," was taken up and discussed by all present with much spirit. It was conceded that ability is the greatest essential to success; that many are successful only on special lines; that the acquisition of wealth is not the only test of success, but doing well whatever in life comes to your life to do is success, whether that is on lines of trade, manufactures, professions or agriculture; that man, no matter what his calling, is a success who has done something to promote the welfare and betterment of the human race, and who has provided means for the comfort and education of his family and for his own support in comfort after he has passed the time of life at which our mental and physical condition will enable us to provide means.

There was drawn from the question box and discussed: 1. What effect on the crop has the peach curl leaf? 2. Can we protect our stock from being worried by flies, and how? 3. How should the laws for the distribution of water for irrigation be revised? 4. Should unsold government lands be rented for grazing purposes, and how?

The last question was referred to a committee of three to report at next meeting.

The subject for next meeting will be, "Of What Advantage is a Good Education?" J. T.

### Wild Horse Drive in Nevada.

In Lander county, Nevada, on April 25, a big wild horse drive will take place. It is estimated that between 4000 and 5000 wild animals will be slaughtered and left as food for the carrion crows. Already 100 men have agreed to participate, but it is expected that twice that number will aid in the drive.

For some time past the farmers and stockmen have experienced much trouble from the immense droves of wild horses. These animals dash wildly about the hills and valleys, destroying crops as well as scattering herded cattle. The horses are of no value. They cannot be tamed, and, in fact, cannot even be caught. Costly animals that have been in service for years often follow in the wake of these bands and are lost to their owners.

When the proposition of killing the wild horses was advanced it was warmly welcomed. A drive of a similar character was held years ago, but on a smaller scale and with results that were so satisfactory that there was lit-

### Deafness Cannot Be Cured

by local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

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Hall's Family Pills are the best.

tle difficulty in enlisting the efforts of every one in the county.

The plans, as arranged, are for concerted attacks from each end of the county. The citizens of Upper Reese river, in the northern portion, will assemble at Midas, and the inhabitants of Smith Creek valley, in the southern section, at Peterson's ranch. These two bodies of men, well mounted, will advance in the direction of each other, driving the wild herds ahead of them. Many of the animals will be shot on the run, and more will be driven into corals constructed at intervals along the drive. At the point where the meeting is expected pits have been dug, into which the horses will be run to their death.

It is expected that several days will be required for the drive. Business in the farming and cattle section will be entirely suspended, but those who will devote their time consider that their future reward will be more than ample to compensate them.

Please Mr. Druggist give me what I ask for—the one Painkiller, Perry Davis'. I know it is the best thing on earth for summer complaints. So do you. Thank you: there is your money.

### Three Bottles Cured Two Spavins.

Elkton, S. D., March 7th, 1902.  
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Gentlemen:—Please send me a copy of your "Treatise on the Horse and His Diseases." My father cured two spavins, one on each of his horses, and used only three bottles of Kendall's Spavin Cure. I know just what your remedy is. Two of my neighbors used the spavin cure for carb and they have cured them completely. The legs are left in good clean shape and there is no sign any of spavin or carb. I am using one of the horses on my farm to-day and you could not tell that he ever had a spavin. Very truly yours,  
GEORGE SEARS.

### Fleming's Lump Jaw Cure.

Here is a remedy for Lump Jaw in cattle that is guaranteed to cure—"free if it fails," is the way its makers put it. There is no guess work about the results where Fleming's Lump Jaw Cure is used, as it has cured thousands of cases in from one to three applications. It is easily applied, harmless and humane. Have also Poll Evil Cure and cure for Spavin. Free information and book of testimonials from many users sent free to all who write Fleming Bros., Union Stock Yards, Chicago, mentioning Catalogue K.

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132 acres; 5 room house, barn and outbuildings; 6 acres prunes, 6 acres grapes, 9 acres hay, balance timber. Water from "Cold Spring" through house and barn. Fine location for resort. One-half mile from Angwins.  
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no matter where located. I can sell yours. Send description and cash price and learn how. Write for full description of any of the following properties:

25 acres, Ventura Co., Calif. Some oak timber. Fair buildings. Orchard of almonds and olives. Stream on land. 2 miles to R. R. \$2,800.  
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160 acres, Solano Co., Calif. Fair buildings. Some timber. Stream on land. 13 acres orchard. 4 miles to R. R. \$1,000.  
40 acres, Lewis Co., Wash. 10 acres timber. Orchard. Creek on land. 9 miles to R. R. \$1,000.  
80 acres, Lane Co., Ore. Land well timbered. Good buildings. Orchard. Stream on land. 5 miles to R. R. \$900.  
89 acres, Solano Co., Calif. Good buildings. Orchard. Beautiful shade trees. 1/4 mile to R. R. \$5,000.  
120 acres, Douglas Co., Ore. Fair buildings. 5 acres timber. Orchard of 25 acres. 10 miles to R. R. \$3,500.  
10 acres, San Diego Co., Calif. No buildings. Land all planted with lemon trees. All in full bearing. Land all under fence. \$3,600.  
20 acres, Tehama Co., Calif. Good new buildings. Small young orchard. Some timber. Stream on land. Land nearly all fenced. 4 miles to R. R. \$3,500.  
160 acres, Conejos Co., Colo. Fair buildings. River on land. All under fence. 9 miles to R. R. \$1,250.  
70 acres, Tehama Co., Calif. Poor buildings. Good fruit land. 3 1/4 miles to R. R. \$2,500.  
160 acres, Dickey Co., N. D. No buildings. 1/4 mile from school. 4 1/4 miles to R. R. \$1,600.  
40 acres, Los Angeles Co., Calif. Good buildings. 7 1/2 acres orchard. Mostly almonds. Land well fenced. 2 1/2 miles to R. R. \$2,000.  
201 acres, Santa Barbara Co., Calif. Good buildings. Creek on land. 45 acres in fruit. Land well fenced. 1 1/2 miles to R. R. \$18,000.  
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160 acres, Ward Co., N. D. No buildings. Land adapted to stock raising or general farming. 3 miles to R. R. \$2,000.  
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## FRUIT MARKETING.

## Consular Advices as to Fruit.

TO THE EDITOR:—Last season, in consequence of the interest taken by E. F. Adams of the Chronicle and Eugene Goodwin of the Commercial Museum, a very fair beginning was made by our foreign consuls in supplying the American fruit growers with information as to crop prospects, stocks in hand and market developments in the countries competing with us in fruit production. I proposed in the last Fruit Growers' Convention that the whole matter should be left in Mr. Goodwin's able hands. The convention, however, so framed a resolution as to take the chief responsibility for the continuance of the service from Mr. Goodwin, and placed it with the State Board of Horticulture. This being so, I should like to learn through your columns what steps the Secretary of the State Board of Horticulture has taken toward an efficient service the present year.

Last year the San Francisco Commercial Museum not only undertook a heavy burden of correspondence, but compiled a cable code and paid for telegrams and postage a very considerable bill. Mr. Goodwin suggests that it would be only right that the State Board of Horticulture should show their appreciation of his work and their wish for its continuance by donating from their appropriation the nominal sum of \$50 in aid of the work.

If the Secretary of the State Board is unable to do those things which the Board seemed to desire the honor of doing, Mr. Goodwin is still willing to be of use to the fruit growers by a renewal and increase of his last year's activity. As the matter stands at present, however, it appears to be one of those cases of sitting on two stools—the whole matter is in danger of falling to the ground. EDWARD BERWICK, Monterey, Cal.

## California Cantaloupe Controversy.

Giant watermelons covering a large field form the subject of an interesting picture which was received recently from California. The melons are larger than those which grow in other parts of the United States, but they are not as rich in flavor as the Southern melon, and will not bear transportation with profit to the grower east of Denver. These melons are sent in large quantities to the Territories and to the States tributary to California, and yield good returns to the growers. A hardy nutmeg melon is being raised in southern California which is being shipped to New York with some success, but until the time of travel between California and New York is reduced still more, the giant watermelons of the Pacific coast will not become an article of commerce in New York.—New York Tribune.

The Tribune is not as well posted on farming matters as it was when Farmer Greeley wielded the editorial pencil. Melons from the Colorado desert, about Indio and Coachella and Kokell have been shipped to New York and Chicago at a very good profit. This year these melons will be shipped in trainload lots and will go to both Chicago and New York in prime condition and a full month earlier than can be had anywhere else in the country. By another season the melons from Imperial, also on the Colorado desert, will be ready to be shipped by the trainload, as the new railroad will be built to Imperial in time for next season's crop. Ripe melons the last of May or the first of June bring high prices to the farmer, and the earliest section is the Colorado desert where a generous supply of irrigating water is to be had, and the water is now running in plentiful supply.—Redlands Citrograph.

Both the writers above are right from their own points of view, for they are thinking about different things. The New York Tribune has a picture of the large California cantaloupe chiefly grown on the Sacramento river; the Citrograph is talking about the cantaloupes of the Rocky Ford type, now being largely grown and shipped from the

southern end of the State. What the New York Tribune says about the melon it has in mind is about right.

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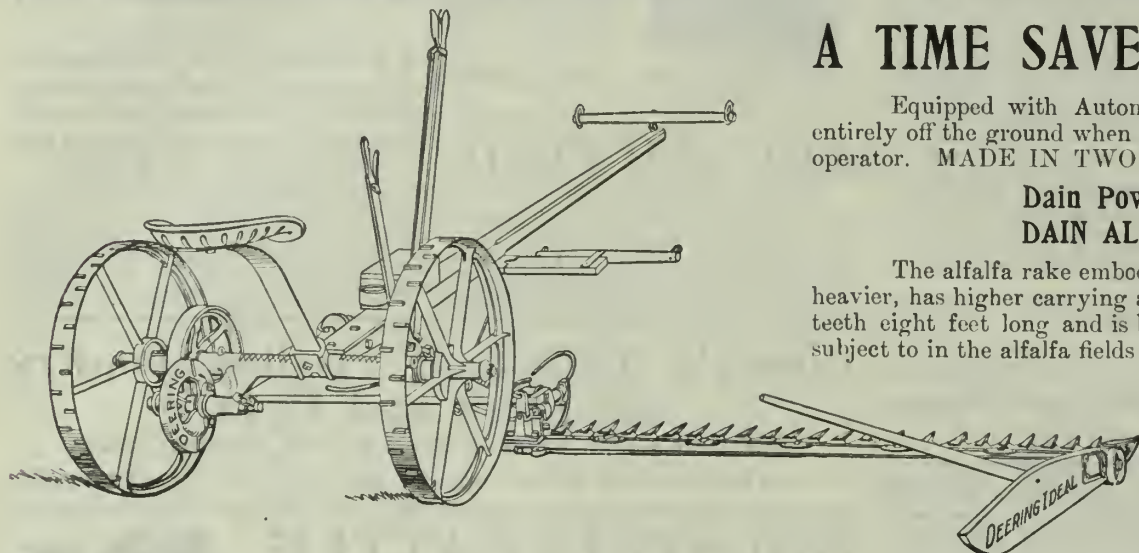
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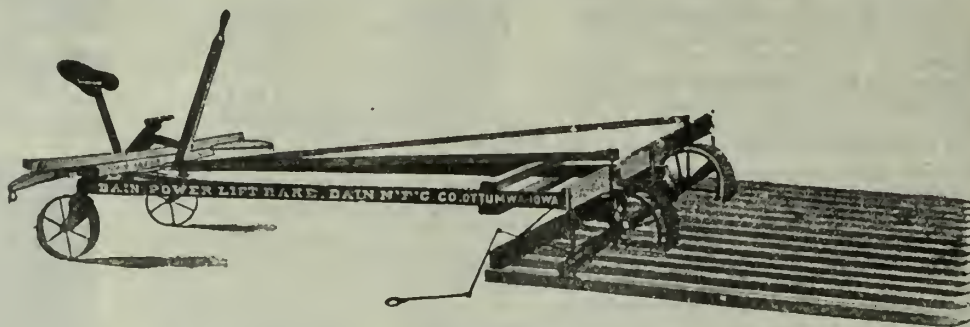
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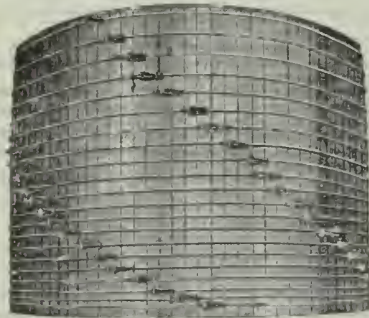
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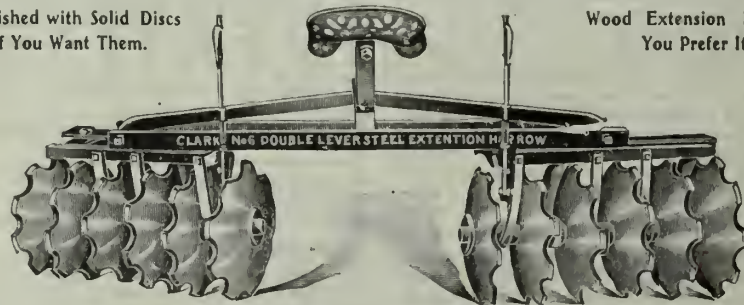
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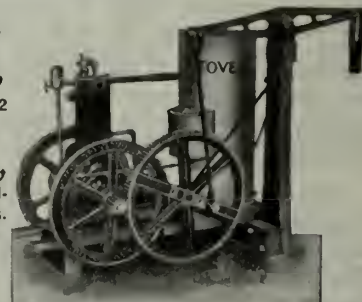
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Vol. LXIII. No. 18.

SAN FRANCISCO, SATURDAY, MAY 3, 1902.

THIRTY-FIRST YEAR.  
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### Live Stock in the San Joaquin.

We have spoken often of the very significant and gratifying advance of live stock interests in the San Joaquin, and we are pleased to prolong the discussion because we count it one of the chief of recent movements for State development. Upon this page are two views which will serve to emphasize the points involved. First, it is very noticeable that the interior press is doing notably strong work in calling public attention to the ways in which the country is industrially advancing. The latest instance which comes to our notice is a special edition of the Merced Sun, bearing date of April 1, which very forcibly and elegantly sets forth recent progress in Merced county. From its pages we are allowed to reproduce the two plates on this page and to extend their influence by bringing them to the attention of our large circle of readers. First is the alfalfa field, the significance of which appears on sight. The vast acreage of such rich forage is the basis of the newer development of live stock interests in the valley. Such a wealth of feed is a surety of plenty which rivals all others. No matter how great the fruit interests may become, no matter how nearly grain may be restored to its old yield and returns, alfalfa will never retire from the general popularity and profit for which it now stands, for it underlies not only the stock interests which are now installed, but the many others which belong to enlightened animal husbandry. It welcomes alike the tiny bee and the massive bullock and all the forms and sizes between the two.

What Merced county has just done in the live stock line is shown by the other plate upon this page. Californians generally do not know that in the face of wide competition a California range company took the first prize on a carload of grade Shorthorns at

the great live stock show in Chicago last December. Those who saw the cattle say that the prize was fairly won. One visitor whose account we listened to said he believed there was an alfalfa field in some corner of that range and in that respect the California company had an advantage over their competitors. We do not know whether it was so or not, but the advantage of it cannot be disputed and that is what we are contending for. If this band of cattle was helped to its clean-cut forms, size and quality by a bite of alfalfa it was all right and California can take some new encouragement in high class beef making from the fact.

The carload of grade Shorthorns was grown by the California Pastoral and Agricultural Company, Isaac Bird, Merced, manager, and it is a good thing for the State to have them exhibited, and it is good also to have the affair as widely known as possible among those who are working for the promotion of the live stock interests of the State.

The present year has seen a considerable increase



An Alfalfa Field in Merced County.

in the alfalfa region of the interior valley. The extension of the irrigation systems is making it wise and safe to cover with alfalfa much land which had become of very doubtful profit under the old system of rainfall grain growing. Much good land recently brought under ditch is now purchasable at very reasonable prices and is rapidly being taken up. The multiplication of creameries and skimming stations of home separators shows that much of the new alfalfa is going into milk, but fine beef, mutton and pork are also profitable alfalfa products which should not be overlooked and which are in fact rapidly increasing in volume, but with little prospect of excessive production.

SOMETHING very fortunate for several regions of the State lies in the fact that the U. S. Department of Agriculture will undertake to lay out a general drainage system for portions of Fresno county which are suffering from rise of alkali. Already an experiment has been laid out to demonstrate the feasibility of washing out the alkali, and the other work is supplementary thereto in that it shows how the water can be disposed of when it has become loaded with alkali. This work will be prosecuted by the irrigation corps of the Department under direction of Prof. Elwood Mead, and will be entrusted probably to Prof. J. M. Wilson, who is the local agent and expert for California.

THE Dixon Tribune says that the well-known Hatch ranch in Suisun valley was sold recently to Eastern buyers for \$300,000. The place contains over 800 acres of the finest land in Suisun valley and is a valuable piece of property.



Carload of Grade Shorthorns From Merced County Which Took First Prize at International Livestock Exposition, Chicago, December, 1901.



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## The Week.

A part of the coast region is having an Eastern springtime this year. Showers are frequent and everything shows free growth amid the ample heat and moist air which have succeeded the rather cool conditions of last week. Some early hay has been caught, but the growth on standing plants more than compensates for any loss on the lying ones. It still looks like a year of the greatest things known to the State.

The most sensational affair of the week is the final passing and signing of the Chinese Exclusion Act. The bars are up now indefinitely. We hope this may serve as an inducement for other laborers to seek this coast, for they are greatly needed. Nearly all lines of agricultural producers are short of help and will have difficulty in handling this year's products.

Spot wheat is unchanged and quiet, but options have declined since our last report about 2 cents on May deliveries, but less for later months. Three straight wheat cargoes have gone out and one of wheat and barley. Barley and oats have no special change, but an easier tone with futures lower. Corn is slow at old figures and rye has a wider range by the falling of inside figures. Beans have improved; Eastern trade is taking Whites and Limas. Millfeeds are unchanged and little doing. Hay is easy and quiet at old prices. Beef and hogs are higher; mutton is unchanged and lamb is lower. Butter and cheese are the same as last week. There is a good demand for butter, but all want it cheap as possible. The Eastern market has suddenly dropped and is thought to have caught some who have made long buys in California for Eastern trade. Eggs are firmer and there is a good demand, largely speculative; some large Eastern operators are said to be buying here. There has been a slump in poultry values; large shipments were made this way to relieve Eastern markets and they have proved too large and have broken our values. Potatoes are strong for choice old; some new are in and selling no better than old. New onions are also in and the market for all kinds has a wide range though choice old onions are being held for an advance. A few new cherries have come here and some have gone East. The crop is late this year. There is still complaint of the quality of the strawberries. Apples are still coming out of storage. Oranges are weaker and there is slack demand except for choice of medium size. Lemons are slow and limes are lower. Dried fruit is in small supply and still jobbing fairly. Raisins are quiet and slow. Honey is weak and holders anxious

to sell. Hops are still quoted high and selling low. Wool is the same as before, buying being active in the country and little in sight here.

There is naturally much excitement following the demonstration that pickled olives have been dyed black with some substance which gives the eaters much bodily discomfort. Sharp condemnation is being visited upon a Los Angeles firm which embarked in this nefarious enterprise. They say in their own defense that they were only experimenting with a "harmless substance" and did not intend the product should go into the trade. Opposed to this is the testimony which we receive from an unimpeachable local correspondent that these dyed olives have been sold all over the south. The consumer who brought the subject to public notice is Mr. E. T. Morris of Los Angeles, who suffered so seriously that he brought the dangerous product to the notice of the city health officer, and an investigation is in progress to ascertain the nature of the substance used, etc. Some sharp arraignment should be made of a party who will for the sake of gain give a food article such dangerous character. If anything is needed to kill the olive interest of California this will do it. We hope the damaging publicity which has been given to the transgression may stop the practice at once.

The fresh meat magnates of the Mississippi valley have been getting so close together that the Government may have to separate them. It seems that they have, perhaps, made themselves liable to prosecution for constituting a trust. The butchers who are being hurt by the packers appeal to Uncle Sam to make them behave. The butchers hold that they can furnish the Government the clearest evidence of the existence of a trust in the uniformity of the wholesale price of beef at all the houses, and in fact that the rise in quotations takes place simultaneously on a certain day in the week. Another evidence cited by the butchers is the blacklist system, under which a dealer who misses the regular weekly payment of his bills to one packing house is unable to buy any meat from another until that bill is paid. There is also a labor issue involved. It is held that this week the specific status of the proposed proceeding of the Government against the big packers will be laid before the Attorney-General at Washington, and it is said that the bill will be filed in the United States Circuit Court next Monday. An injunction is expected to lie against the packers until they reform some of their new methods.

The oleomargarine bill has finally passed, and that is another rap at the packers, but they seem to be lively for all the welts they are getting. For in the Government inquiry into the alleged beef trust there was a sort of a poultry corner uncovered. It takes pretty lively work to keep an old hen in a corner long enough to photograph her, and yet Packer Swift of Chicago seems to be fast enough to do it. The same telegrams which tell of the beef trust say that an alleged corner in poultry, said to have been worked by the Swift interests recently, will have careful consideration by the United States Attorney. Chicago South Water street merchants who by virtue of the corner could buy little poultry except from the Swifts found their profits cut until there was no living in the business. Several testify to the conditions, and will say their frequent repetition means the driving of the commission firms out of existence. It seems that the middlemen are on the defensive against the trusts. Formerly the middlemen had only to resist the attacks of the producers, and now it looks as though producers and middlemen might be companions in misery unless Uncle Sam can curb the trust arrangements.

The latest is that the California Cured Fruit Association will disband. The announcement from San Jose is that the answers received to the questions sent to the growers by the directors show that an overwhelming majority of the growers want the affairs of the Association closed up and its property sold. It seems likely now that the annual meeting of June 4th will be the date when the Association will cease to exist. There is a chance that a new organization, similar in its aims and purposes, but more modest, will purchase the property and good will of the present Association. It will be largely composed of Santa Clara growers.

## QUERIES AND REPLIES.

### Vinehoppers.

TO THE EDITOR:—I have been referred to you in regard to the killing of vinehoppers, which are causing much damage in this vicinity. Some have suggested the spraying with whale oil soap and syrup and others recommend the use of Paris green. I shall be very grateful for any suggestions which will assist us in exterminating this pest.—VINE GROWER, Yolo county.

You can secure by application to the University at Berkeley a bulletin upon the vinehoppers, in which you will see a discussion of methods used for their destruction. Spraying with insecticides is of little account, because of the difficulty of reaching the insect with the spray, from the fact that they move so rapidly when disturbed. Spraying with Paris green would be useless, because the insect does not bite holes in the leaf and consequently could not be poisoned by the Paris green. The vinehoppers are sucking insects and extract the sap from the interior of the leaf substance and are not injured by deposits of poisonous substance made upon the outside of the leaf. It must be acknowledged that these insects are among the most baffling which we have to deal with. There are two kinds—one is larger than the other and when disturbed drops to the ground. These are handled with some success by using shallow pans, half circle in form, so that the two when placed together are about three feet in diameter. These pans are about two inches deep and are partly filled with water upon which there is a small amount of kerosene oil floating. One man operates each of these half-circular pans. They come together carefully one on each side of the vine, so that the insect is not disturbed until the two pans are in place under the vine, which is shaken and the insects then drop freely into the kerosene. In this way large quantities of the insects are captured in the region about Florin and this seems to be about the only feasible method. The other vinehopper is smaller and is the one which chiefly occurs in the Fresno district. When the vine is disturbed these insects do not drop, but rise and the air becomes filled with them. With this species the pans are of no great use. There is no satisfactory treatment. Fortunately they are very much reduced by their own enemies or by unfavorable weather conditions, because many times in Fresno when in the early spring it seems as though vines would be utterly destroyed by the hoppers, the hoppers themselves are destroyed in some way and the vines are saved. A good deal of study has been given to the question, but it is not yet known why the insect varies so much in amount. It is, however, an exceedingly destructive insect and some successful way of fighting it is greatly to be desired.

### Pruning at Thinning Time.

TO THE EDITOR:—Have you any publications or do you know of any which contain any reference as to whether it is injurious to prune peach trees while thinning fruit during the months of May and June? JAMES PARRY, Shasta county.

We have published the fact for years, both as the result of own experience and that of others, that peach trees can be safely pruned while the fruit is small and that a part of the hand thinning may be done with shears. A specific instance of such publication may be found in the PACIFIC RURAL PRESS of March 2, 1901, in which photo-engravings are introduced to illustrate an experiment made at the University substation at Pomona. The fact has also been published for years in "California Fruits and How to Grow them."

### Sulphuring Vines for Mildew.

TO THE EDITOR:—I would like to know the proper conditions under which to apply sulphur on grape vines to kill mildew. There is a great variance of opinion among growers here. About half of them make a great point of applying it on wet vines, while the other half take equal pains to apply it only on bright, warm days and on dry vines. I would like also to know if the ground Nevada sulphur that is now being offered at a much lower price than the sublime may be profitably used for this purpose.—V. H., Los Angeles county.

The application of sulphur on wet vines is merely for the purpose of holding the sulphur where it can be acted upon by the sunshine and evaporized. It is the vapor of the sulphur which destroys the mildew. On the other hand, the application on dry, warm days and dry vines is preferred by some on the



ground that during such times the evaporation takes place most rapidly. There has been no demonstration of the comparative standing of these two methods. Of course, where the vines are likely to be shaken about in the wind the sulphur, if applied to the dry leaves, is soon rattled off onto the ground. From the ground, however, evaporation takes place and is to a certain extent effective. Some growers apply the sulphur directly to the ground on the sunny side of the vine, thinking that from that point evaporation is most freely secured. We are inclined to think that the application at times when a good deal of it will adhere to the foliage is, on the whole, most effective.

As for ground or sublimed sulphur, it is a fact that some of the ground sulphur has during recent years been so finely ground that it answers as well as the sublimed. Ordinarily, ground sulphur is, however, so coarse that evaporation of it is not nearly so free as with the finely ground sublimed sulphur. The ordinary grower, not being able to judge accurately of the fineness of the grinding, can assure himself of a fine division by using the sublimed, and this is commonly done.

#### Old Peach Roots in Nursery.

TO THE EDITOR:—I have a few seedling peach trees in nursery which were budded in 1900 to apricots and did not take. I should have budded again last year but did not have time. Which is the best way to proceed now: cut them off close to the ground and bud this summer, or bud on last year's wood?—GROWER, Santa Barbara county.

The peach seedlings could be budded into new shoots or budded into the old bark; either way will succeed if well done. Budding in the old bark, however, requires rather a more matured bud than is used for new wood. It is, however, quite a question whether these seedlings are worth using at all. If they were budded in 1900 and missed in 1901 the roots must be at least two years old—possibly more. It is seldom that a two-year-old peach root is worth moving, even if it has been undercut in the nursery so as to promote growth of smaller roots high up. Apples, pears and cherries may be handled as two-year-olds infinitely better than peaches or apricots. In our own choice we should prefer to take new seedlings than to incur the risk of a poor start and many failures by old roots.

#### Budding Oranges.

TO THE EDITOR:—Is it a favorable time to bud orange trees when in blossom?—DR. E. L. ROSE, Benicia.

Budding is usually done a little after the full bloom, because a better sap flow comes then. The fact of blooming is in itself of no particular importance and plenty of buds go in while the flowers are still abundant. Success in budding depends upon the free lifting of the bark and the securing of buds in best condition rather than upon the existence of bloom, although, as stated above, there is some relation between the facts.

#### Insects on Rose Bushes.

TO THE EDITOR:—Little red bugs with long noses made their appearance for the first time last year in the early spring. They appeared again this year about six weeks ago. Their habit is to get on very small rose buds when the buds are just developing, boring holes into the same and evidently securing their nourishment from immature leaves. The bud, after being tapped, sometimes withers, but more frequently matures and comes to full bloom, but all the leaves are perforated with numerous round holes.

Yellow bugs of longer body have made their appearance on the rose bushes within the last two weeks and since then the first mentioned bugs do not seem to be so numerous. After having caught the samples sent herewith, I noticed that the yellow bugs seemed to be the enemies of the long-nosed bugs, for the reason that they attacked them and in a short time had killed several of them, seeming to accomplish their work by getting off a sort of liquid that can be seen in the bottle and also by biting them underneath, but I would not be sure whether or not they would kill them in their wild state. I should like to find out if there is anything that can be done to do away with the ravages of the small long-nosed bugs. The yellow bugs do not seem to do any harm to the rose bushes.—ROSE GROWER, Berkeley.

Your entomological observations are quite accurate. The "little red bugs with long noses" are rose weevils and their full name is *Rhynchites bicolor*. They are fortunately not very abundant. There is no better way of treating them than by catching and crushing all that are noticed. The "yellow bugs of

longer body" are Podabrus beetles. They are predaceous insects and are busily engaged in destruction of other insects. From the rose grower's point of view, then, they should be cherished. They feed largely upon the lice, or aphides, which are very injurious to rose bushes. They will not hesitate, however, to tackle larger game, although we have never known of their attacking the rose weevil, except in confinement, as you report.

#### Curing Hay in Mow and Stack.

TO THE EDITOR:—Will you kindly give me all the information you have in regard to the plan of putting clover hay into barns or stacks in a partially green condition, instead of allowing it to cure in the cocks in the usual way? What are the advantages or disadvantages of the system? Do you think there would be danger of spontaneous combustion or of heating or spoiling in the mow or stack? A number of our Canadian farmers have reported good success in curing clover almost green, but before recommending the system I should like to have the results of your experience.—HAYSEED, Toronto, Canada.

Our California experience in the handling of alfalfa and clover hay would be of little applicability to conditions other than those which prevail here. Our summer air is dry, and the fact that rain seldom if ever falls during the clover haying season gives a very quick drying season and makes it safe in our interior valleys, where alfalfa is chiefly grown, to put into barn or stack directly from the swath or from loose bunching, which is sometimes done to prevent too rapid drying. A few hours' exposure is all that is ordinarily necessary, and if longer exposure is given the leaves are largely lost and the hay is poor and stemmy. A little experience shows us how much exposure is needed to rid the alfalfa of surplus moisture and make it safe to handle in bulk. Spontaneous combustion or heating or spoiling in the mow or stack are, for the above reasons, of exceedingly rare occurrence in California. From our point of view, of course, vastly superior hay is obtained in this way than would be obtained by longer exposure to the air, but it seems that you would have to depend entirely upon the experience in a humid climate to reach conclusions and methods which would be valuable to your people.

#### Peanut Growing.

TO THE EDITOR:—Is it necessary to hill up peanuts, or will they grow successfully without it? I have been informed that there is a kind which do not require hilling up. I would also be pleased to know if such is the case.—READER, Sonoma county.

It is a mistake that peanuts need covering. The bloom stem will enter the ground of its own accord if the ground is of satisfactory character—that is, a light, sandy loam—and the surface is kept cultivated so that it can not become hard. Covering them with soil, with the idea that it is necessary for the growth of the nuts, is an old-fashioned idea and is out of date. It is, however, necessary to have the right kind of soil and to keep it loose, so that the plant can grow according to its own nature. If the soil is too heavy, the nuts are misshapen and the product unsatisfactory.

#### Katydid Eggs.

TO THE EDITOR:—Enclosed you will find a twig off apricot with some small bugs on it. We have never seen any like these. Will they hurt the tree or fruit? Please answer through the PACIFIC RURAL PRESS.—SUBSCRIBER, Fresno.

These are grayish, oval bodies, about three-sixteenths of an inch long and half as wide, attached quite regularly by one end and partly overlapping along the twig. They look something like seeds. They are the eggs of the "katydid," one of the grasshopper family, which takes its name from its shrill cry. The insects are leaf eaters, but are never abundant enough to do harm. All growers should learn to recognize them, for they are likely to excite unnecessary alarm and apprehension.

#### Pear Scab and Blister Mite.

TO THE EDITOR:—Enclosed find affected Bartlett pear branch. Please let me know what it is and what remedy I can use to check its spread.—GROWER, Placerville.

The twigs show that you have to do with two different enemies. One is the pear scab, which causes the blackening of the leaves, and this can be checked by the use of the Bordeaux mixture as soon as the trees are out of bloom. Next winter you should spray with lime, salt and sulphur while the trees are

dormant. This cleans the tree from the spores of the scab and very much lessens its appearance the following summer. You have also to do with the blister mite of the pear, which is an exceedingly minute insect, burrowing into the tissues of the leaves and causing the reddish spots which are apparent on the specimens you sent. It is not possible to reach this insect with a summer spray, because it is feeding in the interior substance of the leaf. A good winter treatment with lime, salt and sulphur, or a spray with kerosene emulsion just before the blossoms open, will kill the mites as they come from the eggs which go through the winter on the tree. You will see that you have quite serious difficulties to deal with, and success will depend upon promptly applying the remedies mentioned at the different seasons of the year.

## WEATHER AND CROPS.

### Report of the U. S. Weather Service for Week Ending April 28, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

#### SACRAMENTO VALLEY.

Cool weather and frequent showers during the week have been beneficial to crops. Grain is making excellent growth, and is in first-class condition. The yield of wheat and barley will probably be much heavier than for several years. Hay is also in good condition, and prospects are good for a heavy crop. Hop roots wintered well and are looking thrifty. Pasturage is abundant. Deciduous fruits are advancing rapidly and prospects continue favorable for an unusually heavy yield. Cherries are about two weeks later than last year; the first shipment was made from Vacaville on the 25th. Orchardists in Solano county are thinning out apricots and peaches.

#### COAST AND BAY SECTIONS.

Cool weather with light frosts followed the rain of last Sunday. Rain fell in all sections Wednesday and Thursday, greatly benefiting crops in the southern districts. Grain in San Benito county is looking better than at the last report, and prospects are good for more than an average yield in nearly all sections. Hay is making good growth and will be a heavy crop. Pasturage is abundant. Hops are in good condition. All varieties of deciduous fruit trees are heavily laden and give promise of an enormous yield. No damage by frost has occurred during the season. Grapevines are in excellent condition and advancing rapidly. Citrus fruits continue thrifty.

#### SAN JOAQUIN VALLEY.

Nearly normal temperatures have prevailed during the week. The showers of last Sunday and Thursday were very beneficial to all crops, especially to grain and hay. These crops are now in excellent condition in most places, and an unusually heavy yield is expected in all except the southern districts, where a fair yield may be harvested if conditions continue favorable. The first crop of alfalfa is being cut. Potatoes are up and look thrifty. Light frosts occurred on the 22nd in some sections, causing slight injury to grapevines, but not damaging deciduous fruits. Apricots in Fresno county are as large as walnuts, and a heavy yield is probable. All deciduous fruits are in good condition, and more than the average yield is expected.

#### SOUTHERN CALIFORNIA.

The weather has been generally cool and cloudy during the week, with light showers in some sections. Light frosts occurred in portions of Los Angeles county on the 25th, but no damage has been reported. Grain and hay are in fair condition, but needing a good rain. It is reported that the grain crop in some sections will be a failure if rain does not come soon, and will be cut for hay. Bean planting will commence soon in Ventura county. Walnuts are looking well and give promise of a full crop. Apricots are in fair condition, but the yield will be light. Other deciduous fruits are thrifty, and citrus fruits are doing well.

EUREKA SUMMARY.—Farm work progressed rapidly during the week. Gardening is backward, but some vegetables are in market. Fruit is in good condition and very promising. Crops are growing finely and green feed is abundant.

#### Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, April 23, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the Week.	Minimum Temperature for the Week.
Eureka.....	.90	48.51	45.69	39.65	58	40
Red Bluff.....	.76	30.57	24.23	23.10	66	46
Sacramento.....	.50	17.02	19.41	22.36	66	42
San Francisco.....	.51	14.91	20.48	24.11	62	46
Fresno.....	.34	6.76	10.83	12.49	78	40
Independence.....	.00	4.29	5.81	5.36	78	36
San Luis Obispo.....	.63	21.93	30.45	16.84	72	40
Los Angeles.....	.04	10.56	14.79	17.03	72	42
San Diego.....	.00	6.11	10.66	7.44	66	46
Yuma.....	.00	.68	3.60	2.85	90	48



## HORTICULTURE.

### Bees and Pear Blight.

F. E. Brown, secretary of the Central California Beekeepers' Association, reviews the present condition of the test of the relation of bees to pear blight which is in progress in Kings county. The writing is called out by a statement of Mr. Motheral to the Hanford Journal, as follows:

N. W. Motheral reports that all of the Bartlett pear trees in his orchard, that were not protected by mosquito netting, were similarly affected by the blight, and that those trees that were covered with the netting were not affected. He understands that at Charles Downing's orchard, where the experiments were conducted on a larger scale, of covering some of the trees with netting, the results are also the same as in his orchard.

In Mr. Motheral's orchard the bees were plentiful, as they were also in Mr. Downing's, he says, which shows that the bees were not moved far enough from the orchards but what they could get back, or that some of the bees were not moved at all. He says that the result of the experiment made to test whether or not the bees are mainly responsible for the spread of pear blight have already proven conclusively that the bees are responsible for the spread of the disease, as he has heretofore contended.

**MR. BROWN'S STATEMENT.**—Mr. Brown answers through the journal of last week as follows: Having noticed Mr. Motheral's report of the experiment conducted by Charles Downing, regarding bees and pear blight, I this afternoon went to see the Downing orchard, and truly there was the blight, worse this season than last, and nearly all new developments confined to the blossom. This would seem, at first, that whatever disturbed the pollen was in a measure responsible for the blight.

After riding through the orchard to the house and inquiring for Mr. Downing, I was directed to the trees that were covered with mosquito netting. Here were many large trees that were protected by the netting, where the bees could not get to the blossom at all; but, contrary to the report of Mr. Motheral, there was plenty of blight; however, not so much as upon the trees uncovered, yet the difference is not so great, and there is no more fruit upon these trees than upon the trees that are not protected. The reason is that the fruit was not pollenized, and the blossom, with the stem attached, dropped off. This proves that it is necessary to have bees to distribute the pollen, and I hope all who are interested in this pear blight question will examine the Downing orchard and see for themselves as to the result.

**ANOTHER ORCHARD.**—Leaving the Downing orchard, I next visited Mr. McGinnis, living on what is known as the George Camp place. Here Mr. McGinnis has kept a large amount of bees from year to year. This season he moved all of the bees out, as did all of the members of the Association, but Mr. McGinnis' pear crop is all gone—far worse than last season.

**THE MOVING INCOMPLETE.**—It is very much to be regretted that the moving-out test was not strictly lived up to, as recommended by the two committees, as it will be remembered that the bee men, wanting to do the fair thing, agreed to move the bees from the pear districts in order to test the matter.

This offer to move was made in good faith the first day of last July, and they agreed to keep the bees away from the orchards during the blooming season; but, for some cause, the pear growers did not get around to accept of our proposition until within a few days before the pears came out in blossom. At that late date it was impossible to move all the bees belonging to the Association; but the fruit and bee men, in a joint meeting, mapped out a district 2 miles square and agreed to move the bees belonging to the Association 3 miles from the 2-mile district. At the same time the fruit men agreed to move their own bees and to see that their neighbors' bees, that were not of the Association, were moved out. It was very necessary that every bee be moved out, as otherwise it would spoil the test.

The bee men stated in very positive terms that they would not make any move at all, except they were assured that the bee men owning bees would move their bees. It was positively asserted by the pear men's committee that they would see to it themselves and, if necessary, they would buy up the scattering bees and get them out. There the matter was dropped.

The bee men began work earnestly and systematically, and, by great sacrifice of time and money, moved their bees. True, some did not get out as soon as was wished, but the notice was entirely inadequate.

**PEAR GROWERS KEPT THEIR OWN BEES.**—However, all were out in time for the test; but, sad to say, the pear growers, after being once rid of the Association bees, felt at rest, and now, having plenty of room for their own bees to thrive and do well, have concluded that they were not very anxious about the test, so long as they could keep their bees at home; or perhaps they concluded that their own bees would not distribute the blight (which is true), and the bees once out we will see that they stay out, for, if moved

back, we will poison them. This has actually been talked of and in places poison has been put out. These poisoned bees were analyzed and found to contain arsenic. Should this thing continue, some one who advocates to his fellow men in public places and assemblies the poisoning of bees, will be held responsible, and some one will be called upon to pay heavy damages.

**ORGANIZED OPPOSITION.**—The United States Bee Keepers' Association was organized for no other purpose than to protect its members, and after the bee men of Kings county have offered to move from pear districts in the pear blooming season, and after doing as they agreed, and that, too, at great expense, the National Association will not keep quiet and allow the fruit men to use the poison, without using their ability to prevent it.

It was asserted by Charles Downing of Armona that there were places in the Eastern States where it was unlawful to keep bees within 5 miles of a pear orchard. This statement was published in the Hanford papers. This matter has been taken up and run down to earth and found to be without foundation. There is no such State or county law in the domain of Uncle Sam.

The bee men are willing to, and have done, the fair thing in this matter, but we do not feel that we have a fair deal regarding the moving-out question, and hope that fruit men will from now on do as they wish others to do to them.

**AN EDITORIAL OBSERVATION.**—Hanford Sentinel, April 24: Bee men and pear experts from the domain of horticulture have been having their say on the question of pear blight. In the back yard of the Sentinel's senior editor is one pear tree that has been perfectly healthy for several years up to last season, when the blight got it and it commenced to die from the top. We noticed that the pallor of death first struck it at the very top, and went downward. We cut out the blighted portions this spring and the tree bloomed all right. Then the bees came from somewhere—we don't know where, but they came, and there seemed to be a bee to every blossom. Now the tree looks sick. Nearly every place where there was a blossom the blight has commenced operations, and it is going down the twig into the limb, and it is killing everything as it goes. The condition of the tree would indicate that the blight comes from inoculation, and that the bees inoculate it through the blossoms.

### Loquat Blight.

By MR. C. P. TAFT of Orange at the Farmers' Club Institute at Pomona.

Up to within a few years the loquat has been regarded as practically free from pests of any sort. The loquat grower could put out an orchard and feel fairly certain that no serious enemy was likely to make trouble for his trees. About two years ago it began to be noticed that there was something wrong in a general way, other than isolated sporadic troubles due to local and preventable causes. Twigs, large branches, and sometimes whole trees would wither and die with apparent suddenness. Upon investigation it was seen that what seemed sudden was the result of a disease that had been working for perhaps months and had only just made itself conspicuous by a girdling of the affected twig, branch or tree, cutting off the sap supply and causing the leaves to wither almost in a night. This alarming state of affairs is caused by a species of bacterium, probably identical with that which causes pear blight.

**SYMPTOMS.**—The work of this pest is first apparent by the exudation of a gummy substance through the bark, caused by the breaking down of its tissue. In the vast majority of cases, infection first takes place through the blossoms. The bees are without doubt the chief disseminators of the disease, carrying the gum from flower to flower on their bodies. Could we do away with this one cause of infection I am convinced that the others would give us relatively but little trouble. Unfortunately the bees seem to be necessary to ensure proper distribution of the pollen, so our, as yet, only known resource is to remove the affected parts, so soon as discovered. As the blossoms wilt very quickly after inoculation, they are easily detected. The readiest way is to snap off with the hand the entire twig from which the bunch of flowers projects so as to be sure to get beyond the diseased part. If pruning shears are used some disinfecting agent should be at hand with which to sterilize those utensils after each cut. Each severed part should be examined at the point of separation, and if the slightest discoloration caused by the blight is found, a further removal should be made farther down where the wood is sound.

**PROGRESS OF THE DISEASE.**—The orchard should be examined at least once a fortnight during the latter part of the blossoming period. If the trees are moderately low and properly pruned nearly all of the disease can thus be discovered and removed. It sometimes happens, however, that some cases will be overlooked or not entirely eradicated. These, I am happy to say, frequently die out of themselves, but

too often the trouble spreads downward (never upward) causing the blight of the limb, and if allowed to reach the trunk, the death of the entire tree. The rate of progress is about 1 foot per month. So far as my observation goes, the proportion of blossoms affected is not excessive, in most varieties not enough when removed to amount to a decent thinning out.

**VARIETIES.**—Some varieties are far more susceptible than others. The Advance is not very easily affected; the Victor exceedingly so. I have a tree which has been budded about equally to Advance and Victor, and it showed over sixty blighted blossoms on the Victor to one on the Advance. The same difference was noted between the same varieties elsewhere. One variety which I call the Red Blush is almost immune. I have about 100 trees of that kind and at least half have not shown even one blighted blossom. All of the other varieties which I have found to be especially worthy of continued propagation are fairly resistant. Only the Victor, which is a pink-fleshed variety, fails in this respect. Of seedling trees I have noticed that usually those trees which have highly colored fruit are the least resistant.

While it is impossible yet to speak with certainty, from the present outlook, I should say that this blight will not prove an insurmountable obstacle to the careful fruit grower. As the chief fault of the loquat is a habit of overbearing, the moderate thinning necessary as a result of this disease may prove a benefit. But care will undoubtedly be required; the loquat will no longer, as heretofore, look out for itself.

### The Dewberry in Southern California.

The Los Angeles Herald gives an account of dewberry growing by Mr. Gray of Gardena, in which the crop raised last year—1901—on a half acre of four-year-old vines was given by Mr. Gray as follows: There are twenty-two rows, 204 feet long. From a single row he picked 482 boxes, or sixteen crates, the average of the twenty-two rows being fifteen crates to the row. For the season, which lasts from about May 10 to June 15, the average price was \$2 a crate, \$30 to the row and \$660 to the half acre. It cost 1 cent a box for picking, or \$4 50 per row yielding fifteen crates, a total for the crop on twenty-two rows of \$99. To this expense account must be added the use of land, cost of irrigation and cultivation. Mr. Gray says it costs for labor and water about one-quarter as much as for strawberries, while the berry season lasts only about five weeks. Exact figures of cost of cultivation and irrigation were not obtained, because they were forgotten in the inquiry, but about one-quarter the cost of strawberry culture would be a fair estimate, say \$25 an acre. Other expenses, including cost of boxes, incidentals, commissions, taxes and interest on investment, might bring the total expenses up to \$210 an acre, from which it appears probable that a net profit of \$900 an acre is a close approximation of the actual income realized in the dewberry industry from a single acre of good, sandy loam.

The size and quality of the fruit, a description of the plant, and the method of cultivation best adapted to it, should also be given. Sixteen berries top a box, showing that they are very large. The flavor is superb, they are very sweet and juicy, and lack the acid taste found in blackberries. They are superior shippers, arriving in Chicago in fine condition. Most of Mr. Gray's crop will go in refrigerator cars to that city this year. Being so very early in the season, they bring high prices, and an almost unlimited market in that city alone is ready for them.

It has the usual habit of the dewberry, its long, slender vine trailing on the ground, many of them 15 feet long, but in cultivation they are trained on a wire stretched taut on small stakes 15 to 18 inches high, forming a dense row of vines and foliage about 1 foot wide, for perfect berries must ripen under the leaves in the shade, though vast masses of them are exposed to the sun, for they are incredibly numerous all over the vines, really in clustered masses—the usual number of berries being eight or nine from each bud. The bloom is white, with a faint flush of pink, extremely delicate, single blossoms often measuring 1½ inch across.

Plants are propagated from the tips of the vines, which are placed 2 inches deep in the moist earth near the row and covered, the ground being kept in good germinating condition by irrigation and cultivation, using a light cultivator, the rows being 5 feet apart to allow room for this purpose. The tips will soon take root and the vines are then cut off near the ground that the plant may grow its own top. The old vines are all cut away and removed as soon as the crop is off and the new plants are set, when new vines spring up from the roots and as they grow are trained on the wire for another year, the work being then over for the season.

Another remarkable characteristic quality of this dewberry is its immunity from frost blight, demonstrated fully in April, last year, Mr. Gray says, for the vines were in full bloom and passed through the heavy frost of that month entirely uninjured, as did also his Lady Thompson strawberries. Since the



dewberry is so extremely early, ripening by the 10th of May, this frost-resisting quality is of the utmost importance.

Mr. Gray also has many varieties of strawberries, but regards Lady Thompson, Brandywine, Excelsior and Arizona as decidedly his preference, being in the order named. Excelsior and Brandywine are much the best long-distance shippers.

## THE FIELD.

### Sweet Potato Growing.

J. B. Osborn writes for the Merced Sun an interesting account of the sweet potato industry of Merced county. In the vicinity of Atwater, 6 miles northwest of Merced, are several thousand acres of land that seem to be peculiarly adapted to the growth of sweet potatoes, as experience has demonstrated.

**EXTENT OF THE BUSINESS.**—Prior to 1893 the sweet potato business was looked upon as a side issue by those interested in raising them. In fact, they were grown only in connection with vineyards and peach orchards, and were shipped in small lots to San Francisco, at times selling for as little as 40 cents per 100 pounds, and again as high as \$3. Prior to that year a full carload had never been shipped from here, but a small amount would then flood the market.

From this small beginning the industry has grown and flourished, until now about 100 families are engaged in raising sweets in this locality, and during the past season over 700 carloads were shipped from the Atwater station alone.

**ADVANTAGES OF THE CROP.**—The land is light sand and free from flint, not blow sand, and usually produces 125 sacks to the acre, a sack weighing about 120 pounds. Some farms in this locality produce more than 200 sacks to the acre. This season there was paid for the crops from several 20-acre potato farms as high as \$2500 each. These same farms have on them houses, barns, outhouses, and small orchards, leaving only about fifteen acres for sweets. While there are localities where this would seem like a small income from the land, it must be borne in mind that this land costs only from \$30 to \$60 per acre, and is cultivated almost entirely by the owner himself; and, unlike the vineyards and orange and peach orchards, the sweet potato farms produce a crop the first year. All these do well, however, in this vicinity, and many who now have profitable peach orchards raised sweet potatoes while they waited for their trees to come into bearing. It is a well-known fact that a poor family can not move to a new country and for the first several years raise fruit, as the trees have to mature, and the family must live in the meantime. In this particular this favored locality has an advantage over other sections of the State. Here the poor man may raise sweets while waiting for his trees to come into bearing, and, beside making a living, can lay up a little money if he be industrious.

**HOW THEY ARE GROWN.**—The seed sweet potatoes are placed in hot beds about March 1, and should begin to sprout in from seven to ten days. They are ready to plant in the field about May 1, and should be planted in that month. Four men can plant one acre a day if the land is all prepared. The land should have two good plowings, and should then be thrown up in ridges 3 feet apart. The plants are set on the ridges 14 inches apart. If the season is warm, and it generally is, they will be ready to harvest the latter part of August.

Sweet potatoes are dug with a common plow. The tops are cut three rows at a time and rolled over like a carpet to one side. The plow splits the ridges down the center, throwing the sweets on top. They are then picked up and placed in piles of from 500 to 800 pounds, and the vines are put over them to protect them from the sun and from the cold nights when winter comes; but it is always best to have them in cellars by Christmas-time. They are corded solidly in these cellars like cordwood and never disturbed again until boxed or sacked for the market. These cellars usually hold from sixty to seventy tons, and you will find one on every potato ranch. They are built half above and half below ground, being about 8 feet from top to bottom.

**QUALITY OF THE MERCED PRODUCT.**—In the East, where our sweets were marketed this season, a test was made as to their keeping quality. After being in the car for ten days, a crate of them was placed in a show window alongside a crate each of Georgia and Kansas sweets, and when the others had "melted" away in the cold, the Merced sweet stood up sound and firm.

The matter of evaporating and canning sweets is practicable, having been tried with success; but sweets have always been at a paying price for shipping, and no inducement has ever been held out to such an enterprise. However, in the near future we expect to see such an industry here, when the over-large as well as the under-size sweets may be profitably treated. Tests made by experts prove the

Merced sweet to be the only sweet which will pass through a colander, having no strings to bother. This makes them the only sweet known for canning purposes.

**LOCAL POINTS.**—Water for irrigation is purchased from the canal company at the rate of \$1 per acre per annum. For household purposes it comes from bored wells, which are about 40 feet deep. At that depth the purest of water, free from alkali, can be obtained. This community, although under irrigation for ten years, is very healthy, and chills and fever are almost unknown.

I estimate that 750 tons of culls have been used in this locality during the past year for stock food, principally for hog feed. The culls are the large cracked potatoes and the small, rooty ones. They make excellent hog feed, if mixed with a little other feed, or if fed with the vines.

The sweet potato crop of this season for this locality I estimate at \$180,000. This estimate is based upon prices paid by myself at different periods.

There is a splendid opportunity for the poor man to make a living here. The only tools, implements and stock necessary to engage in sweet potato growing are a plow, a shovel, a rake, a hoe, two horses and a wagon. More than half the people came here with from \$200 to \$300, buying their land on time and living in one-room cabins, and to-day they have nice homes, large barns, and their places are paid for.

### Melon Growing at Rocky Ford.

Our readers who are growing cantaloupes, either in the older parts of the State or in the newer melon belt around Indio, will be pleased to have a detail account of how melons are grown at Rocky Ford, Colo., as given by a leading grower, D. V. Burrell, in the Orange Judd Farmer:

**CLIMATIC CONDITIONS.**—Both watermelons and cantaloupes succeed best in a dry, hot climate, and here at Rocky Ford we have the ideal place to mature each to perfection. The moisture is practically all applied by irrigation and the season is long enough to give ample time to secure a full crop, and by this I mean to allow from six to eight weeks of ripening season.

**SITUATION AND SOIL.**—The successful grower selects a dark, sandy loam well filled with vegetable mold that has either been supplied by heavy manuring with coarse manure or by plowing up alfalfa land. The slope of the land must be sufficient to cause the water to run without flooding out of shallow furrows and yet not steep enough to be washed into ditches by the water. With the proper lay of land each time it is irrigated the sediment carried in the water is deposited, which increases the fertility of the soil. The plowing is carefully done to a depth of from 8 to 12 inches, and as soon as a strip as wide as the harrow is plowed it is thoroughly harrowed first with the teeth straight to a depth of 5 to 6 inches, going over it two or three times, and then with the teeth slanted as much as possible, which leaves the surface level, and a fine, well-settled seed bed.

**LAYING OFF AND PLANTING.**—The land is then laid off in checks 8 feet each way for watermelons and 6 feet each way for cantaloupes. The grower then takes a single-shoveled plow and furrows out the land with the slope and in the marks as referred to above. Every twelfth mark is not furrowed and is left for a road. The seeds are planted as soon as danger of frost is past in hills about 12 inches long, where the checks cross the furrows and just on the border of the furrows, taking care to plant high enough so the hill will not be flooded and to protect the border of the furrows. About fifteen seeds are planted to the hill and well separated, so as to allow the fullest chance for early growth. For early planting 1 inch deep, later 1½ to 2 inches. As soon as the planting is done the water is turned into the furrows and a small stream allowed to run in each until the soil has taken up enough so that the surface looks moist an inch or two on the opposite side of the hills from the furrows; this will settle the soil about the seeds and insure a perfect stand, which is the first step toward success.

**CULTIVATION.**—I use a Planet, Jr., two row, pivot wheel cultivator with which to do most of the horse cultivating, and begin as soon as the melons are planted, not waiting for the plants to come up. Careful tests have proven that one cultivation a week will develop twice as much available nitrogen as compared with one cultivation in two weeks. Cultivate deep and get farther away from the hills as the vines grow, as the roots grow as fast as the vines. I keep the cultivator going as long as I can get through the field, using a nine-tooth Planet, Jr., drawn by one horse to finish the work, so that within a few days after the last plowing the vines cover the ground. The first hand work should be done with a rake three or four days after planting and consists of lightly raking the surface of each hill, taking care not to go deep enough to disturb the seed. This hinders the grass or weeds and enlivens the soil. The first hoeing is done as the plants are well up and should be very thorough. The plants should first be thinned out so that six to eight remain and leave

them about 2 inches apart. Stir the soil thoroughly around the hill and draw fresh mellow earth up to the bottom leaves of the plants.

The grower must then water lightly, after which the furrows are plowed in and must be made again for each successive watering until the last plowing, when they must be carefully plowed out and left for future waterings. The second hoeing is done when the plants have four to six leaves and at this time the hills are thinned to two plants, taking care to select the strongest, standing well apart. The hoeing is done same as before. Care must be taken not to water too often, as the plant gets in the habit of looking for surface moisture and starts no long tap roots; while if forced to go down after the moisture it becomes much more hardy and produces a firmer melon of better quality. The third and last hoeing is done when the vines average about 18 inches long, and can be easily lifted with the left hand while the soil is stirred about 2 inches deep and drawn to the roots with a light hoe in the right hand.

**INSECTS.**—Early in the season if bothered by the small striped beetle, we dust the plants with fresh slaked lime by putting a small quantity in a loosely woven burlap sack and shaking it over the hills. If bothered later by the melon louse I saturate the affected hills with kerosene and then spread straw over them and burn all the lice. The vines must not be pulled, as the lice will drop off on other vines and then continue to spread. In order to be able to destroy these at once when they appear, it is quite necessary to look after all of the field at least twice a week.

## THE SWINE YARD.

### Breeding and Care of Swine in California.

By ELIAS GALLUP of Hanford, at the Tulare Farmers' Institute.

The subject assigned to me for this paper is "Breeds and Raising of Hogs." In the first place I will give you only what has come before my observation, and will cover a period of twenty-five years that I have been before the public as a breeder and seller of thoroughbred swine. There are a great many different breeds of swine, but I will speak only of those that are bred in the United States or in this State.

**LOOKING BACKWARD.**—In the early '60s in this State there was a small black hog raised called the Chinese hog. I do not think that they could be called a breed, but derived their name because they were the style of hog desired by the Chinese butchers. About that time, in the early '60s, J. D. Paterson imported to this State the Essex. We bought a male pig from him and crossed him with some sows that we had of no particular breed. They were easy keepers and their flesh, when fattened, was firm and of a superior quality, which is a characteristic of the Essex. At the present time there are but few breeders in the East raising Essex, and only two breeders that are breeding Essex in this State.

There are a few small Yorkshires bred in California—a small white hog that has his nose turned up to everyone he meets and everything he sees. There were a few Victorias raised in California twenty years ago. They were a medium-sized white hog, resembling the Berkshire.

Two years ago Sheyt & Davis, from Indiana, showed at the State Fair a carload of these hogs, but they did not find favor with the swine raisers in this State.

There have been and are a few hogs called I O C hogs imported from Ohio to this State; but as they do not cross well with our native black hog, they have never been a success with those who owned them.

The Chester Whites are raised in the East successfully, but I do not know of any in this State; they, like all white breeds, do not do well in this hot, dry climate, and the farmers do not take kindly to them.

**Duroc.**—The Duroc Jersey was twenty-five years ago raised in Monterey county and sold in this State, and you often see a red hog among a lot of stock hogs in this county. They are good feeders, good mothers, and would, as bred by modern breeders, be good hogs for our alfalfa pastures, and a profitable hog for the farmer. There must be something underneath that red coat of hair that is profitable to the pork producer of the great middle West, or the breed would soon pass into obscurity. I would like to see some enterprising farmer import some to this county. Their make-up resembles the Poland-China and, as bred to-day, they are very prolific and good feeders. There is no breed that has improved so much in the last ten years as the Duroc Jersey. By referring to their records, covering a number of years, I find the sows usually raise from nine to ten pigs, the pigs usually being remarkably even in size and general appearance. The dams are abundantly able to suckle them. The pigs are active and will hold their own as grazers, and, when finished for market, will account for every pound of grain that has been eaten.

**BERKSHIRE.**—The Berkshire did for a long time hold foremost position among the breeds of swine and has, no doubt, been a source of help to them. Any



breed that has stood the test of time and is in the second century of its existence, is certainly secure in the future. It is of necessity a survival of the fittest—the Berkshire is to the swine field as the grand old oak is to the forest. He has had no booms or soaring prices, but has gone steadily on in the even tenor of his ways to that practical improvement which makes him to-day the aristocrat of all breeds. He has had help from the wealthy breeders of the great middle West, and he is an Englishman by birth, imported to America, that has kept him popular among many. The American breeders had much to do with the improvement of the Berkshire as they are bred to-day. We do not have to go to England to find the best specimens of the breed. England comes to us. The American breeder has done as much in the last twenty years to improve the Berkshire as would have been done by the English breeder in fifty years. As I have said before, the Berkshire is the aristocrat of all breeds, but it is not always the sons of aristocrats that make a success of business.

**POLAND-CHINA.**—The Poland-China started in the world with a mixed parentage. He was, you might say, an orphan child, without parents at all. The hog that the farmer and feeder want is one that will convert his surplus grain into meat and make the most pounds for the amount consumed. The farmers of the great middle West were not long in finding that the Poland-China filled the bill. So far as I am capable of judging, and I have had twenty-five years' experience, I think the Poland-China hog possesses all the constituents of hardiness with power of assimilation second to no breed. They may be bred to any size desired, may be fattened at any age and are as prolific as our modern breeds. I breed them because the people buy them, and that is my business. I raise hogs to sell. There are more Poland-Chinas raised in the United States than all other breeds combined, and the pork producers are men of brains and know just what they are doing.

**CARE ESSENTIAL.**—But I would say to you that the breed does not cut as much of a figure as the care you give the hog. As that is the important part, I will give you my ideas on that subject. In raising hogs of any breed you have got to care for them to make them profitable. I have given you my ideas about breeds, but I will say to you: do not mix them. If you desire to raise Berkshires, continue to raise them. The idea that crossing breeds makes them hardy is all wrong. The Berkshires crossed on the common hog does not improve them as fast as the Poland-China. The latter have larger hams and seem to mix well with the common hogs. Some farmers claim that the Berkshire is so wild and unmanageable. They are high-tempered and require very kind treatment. The Poland-China as bred to-day are very different from what they were twenty years ago—have more style, finish and temper. We need style and temper. A lazy hog I would not want, whatever breed it might be. There is no animal that will resist unkind treatment as much as the hog. To be successful in raising hogs, you must have sires and dams that are strong and vigorous, and when mated they should be in good thrift and in good flesh.

**THE PIG AND HIS SIRE.**—The most important time in a pig's life is from farrowing time until he is three months old. If he is in good growing shape at three months you will have no trouble in keeping him growing. The reason that many fail in making the swine business pay is that they do not give the hog proper care. He is allowed to run and range over the neighborhood and is the worst looking animal on the farm. If you have common sows and wish to improve them, go to some reliable breeder and secure a male pig and raise him yourself; grow him up thrifty and strong; keep him in a lot by himself; feed him well—plenty of grass and grain, with a chance to exercise; don't have him so poor and scrawny that you are ashamed to show him to your neighbors.

**THE DAM.**—The sow, to be a good breeder, should receive the same good care, and at farrowing time should be in good flesh. I do not think she should be too fat, but if the flesh is put on in the right way it will all be needed to carry the pig through to weaning time. I do not mean that a sow should be in so high a state of flesh as the show ring requires. When in that condition it takes an expert to reduce them successfully. I believe in plenty of flesh and to keep that flesh gaining from day of birth till time of using, and try your best to keep them improving, but there is a vast difference between the good flesh and the flesh a boar or sow must carry to win at our leading fairs or shows.

**CARE OF SOW AND PIGS.**—You may ask what I would feed the sow and her litter. We have to feed whatever we can raise on the farm, but there is nothing that will make a pig grow as fast as cow's milk and middlings. But in the absence of milk we are obliged to use the best substitutes. Great care should be taken when the pigs are young not to overfeed the dam to create too large a flow of nature's food, the mother's milk.

Herein lies one of the great secrets of success with young pigs—that is, getting them started right. Generally when young pigs get a backset of any kind they seldom ever recover and develop as their more fortunate cousin that has been started right.

Cold, damp sleeping places and foul bedding is a source of serious trouble with very young pigs, and

should be guarded against. Nothing but warm, dry places should be supplied, with due allowance made for a place to exercise in as they grow older, and as soon as possible they should be allowed to run on a good grass lot. Their growth for the first three to five weeks will be secured through their dam, and if they have had no serious backset up to this time they will begin to eat. They should then be supplied with a side dish of their own.

The little fellows are now at the age of five or six weeks and they have begun to rustle for dear life with their dam, and at this time we can gradually begin to increase their feed and slop. We are approaching the stage in the pig's history when we should largely supplant the expensive grain ration with nature's cheapest hog food, the green alfalfa pasture, which is not only economy in hog production but is conducive of health and is a good bone and muscle forming food. With good alfalfa pasture provided, we are able to produce pork very cheap, not losing sight of the fact that the kitchen slop, skim milk and grain ration should not be dispensed with, but all used together. Eternal vigilance, with plenty of push, will land us at the envied goal with some very fine porkers.

**FEEDING.**—In conclusion, allow me to say that, laying aside the outlay and not taking into account the cheapness of the fuel to be consumed, we know of no better hog food than that of shorts and skim milk from our skimming stations, and they should be fed and hardened with corn or barley. It is within the province of this paper that the food advised was with a view to cheapen the production of that which is the ultimate end of the hog, the pork barrel. You will secure grand results with this treatment and food mentioned, and at the same time largely decrease the cost of your production, which is the greatest achievement to be secured.

**MARKETING.**—It has been the custom when writing papers for Institutes to carry the pig along until you are ready to put him on the market, and then drop him as you would a hot potato. I will take him along a little farther this time and leave him at the slaughter yard. It would be folly for the fruit grower to raise nice fruit and then put it on the market in old, dirty boxes.

Now, brother farmers, I am going to register a kick against the way you disfigure your hogs by ear marking and cutting off the tail. It is a cruel practice and should not be done. Some men are inclined to do what they see others do, and always have an excuse for their wrong-doing.

I will tell you a little story. You have all read about that man Noah, who built a small ship when the flood was coming and took aboard a pair of every kind, and when the flood was gone he opened the gate and let the animals out. Mrs. Noah had the broom in hand, urging the animals along. When the hogs came out Noah gathered hold of them and cut off their tails. Mrs. Noah used the broomstick on Noah for his wrong-doing. His excuse was that by doing that he could tell his two hogs from his neighbor's hogs, and said it made them look square and blocky. As I have said before, some men are always doing what they see other people do. By disfiguring your hogs it makes them look ungainly and bring less money. There is as much in putting hogs on the market in good shape as there is in anything else. We see at the shipping station hogs driven in, turned into a filthy feeding pen, fed grain and mud, and allowed to gorge themselves, put on the cars, and when they are at market and slaughtered their system is in a feverish condition and some one eats their meat.

The fruit men put their fruit on the market in an attractive way, and if the swine raiser expects to increase the consumption of pork and receive money for it, he certainly can better his condition by improving the quality, which is done by better breeds and better care.

## THE POULTRY YARD.

### Poultry in the Orchard.

George A. Sealy, president of the Santa Clara Poultry Club, gives the following interesting record in a recent issue of the San Jose Mercury:

Thinking that a statement of what I have done in the poultry business for the past five years would perhaps be as interesting as anything I could write at this time, I will make that the subject of this paper. When I arrived in California, five years ago last October, I found that my wife, who had preceded me, had one hen and fourteen chicks. I then decided to do something with chickens in connection with orchard work. About Jan. 1, 1897, I bought an incubator that held 216 eggs; started it on the 8th with fifty-nine White Leghorns, ten Buff Leghorns, forty-five Buff Plymouth Rocks, ten Dark Brahmas and ninety-two mixed eggs, and got only seventy-nine chicks. I did not think it a very good hatch. On Nov. 1 I had lost but five out of this hatch. It would take too long to give a detailed account of every hatch, so I will only give the totals. That year I hatched 897 chicks. I should have mentioned that

we also bought thirty-six hens when we started. On the first of October of each year we take account of stock. At the end of the first year we found that we had made net \$32.92 and had on hand forty-three hens, two cocks, 364 chickens and eighty-nine ducks. The second year we hatched 1171 chickens. On taking account of stock Oct. 1, 1898, we found that we had made net \$205.50, and had on hand 582 fowls, after selling 784. We had seventeen different kinds of fowls, and I soon became aware that it was not the most profitable way to raise chickens to have so many different kinds, and commenced to cut down on the kinds that I thought gave the less profit. Now I am down to one kind, and that is the White Leghorn. The next year I hatched 785 chicks. The profit this year was \$331.95. After this year we did not keep account of the number hatched. The profits were less, being only \$242.03; the reason of this dropping off in profits was because the chickens were neglected for Belgian hares. Last year there was a net profit of \$254.96. We only had 148 laying hens this year. Besides this, we have our stock on hand and the plant—all of which the hens have paid for. This year I am doing more than ever with poultry. I am keeping two incubators going all the time. The past winter I built a brooder house, 12x45 feet, heated by hot water pipes. It has a brick furnace, with two water backs, and two galvanized iron pipes running the full length of the house. I can keep 500 chicks in this house at one time, and they have lots of room.

### Fruit and Poultry.

A paper on this subject was read at the last meeting of the San Jose Farmers' Club by E. Van Every, proprietor of the Santa Teresa Poultry Ranch of Edenvale. Mr. Van Every is secretary of the Santa Clara Valley Poultry Club and has made the subject a study. The paper is as follows:

No two pursuits so thoroughly harmonize as that of fruit raising and poultry culture. The land necessary for the fruit farm can be doubly utilized by the addition of poultry, much to the advantage of trees and fruit. On the other hand, the finely cultivated orchard affords an ideal poultry range, well shaded in summer, where the fowls thrive and are a continual source of profit and pleasure to their owner.

Except in the prune orchard during the ripening of the fruit, the fowls have not been found to be of any disadvantage. Here we would advise confining the poultry while this crop is being harvested.

**CHICKENS AND TREES.**—In the case of peaches and apricots, they have proved of no trouble and do not bother the ripening fruit on the trees. Where flocks of poultry are colonized in the orchard the depredations from insects and pests are reduced in a marked degree.

The canker worm, which has been so destructive in many of our orchards during the past few years, has been kept in check or entirely exterminated in orchards where the poultry had unlimited range. In the neighboring orchards to those we have in view large sums were expended in fighting the pest, including the trees and the like, with nothing like the efficiency of the fowls. The combination of these two industries, fruit and poultry, opens a way to provide a steady income, in place of being dependent on fruit products alone, which frequently are slow and disappointing. Poultry products are cash and at fair prices the year round, with no danger of overstocking the market with good products. It is here that the value of the pure-bred fowl asserts itself and enables the dealer to furnish articles of uniform excellence and such as meet the demand of the market. Take, for instance, our egg market, which demands large, white eggs, and such usually bring from 2 to 4 cents more per dozen than lots of mixed size and color. To meet this call one has to select some one variety of the Leghorns or Minorcas, which class of fowls are our most prolific layers of large, white eggs.

**THE MARKET QUESTION.**—Where market fowls are desired, it is but necessary to select some one of the larger breeds to produce a first-class article in that line. As like produces like, one has but to select from the pure-bred fowls the variety which meets the requirements, and uniform results may be expected.

It is not to the advantage of the orchardist to attempt to carry a number of varieties of pure-bred fowls, but it will be found profitable, as well as a pleasure, to incorporate one variety with their orchard business, keep them pure and breed them up to the highest standard of excellence possible. A single variety will give much larger returns in proportion to the expenses than where a number of kinds are kept. Many would find a great source of pleasure in having a fine flock of standard fowls.

UNDER the Forest Reserve law, the Secretary of the Interior is authorized to grant permits to construct ditches and power plants; but he is not granting any pending a reforming of the law by Congress, two bills for which are now pending. It seems that under the law as it stands a permit granted could be revoked at any time.



## Agricultural Review.

### BUTTE.

**WHAT FRUIT PAYS PER ACRE.**—Oroville Mercury: J. H. Leggett, the fruit grower, who lives 1 mile from Oroville, has 150 acres in fruit. Five acres of cherries returned \$600 per acre gross, or \$450 per acre net. Twenty-five acres of peaches, seven years old, netted \$50 per acre. From seventy acres of Tokay grapes, ten years old, he netted \$200 per acre. Eight acres of White Adriatic figs, fourteen years old, netted \$150 per acre. Ten acres of Tragedy prunes, ten years old, netted him \$100 per acre. Three acres of sixteen-year-old Navel oranges netted \$300 per acre the past season. The gross revenue from his 150 acres the past year was \$18,000, or a net return of \$9000.

**DEMAND FOR OLIVES INCREASING.**—Oroville Mercury: The ripe olives that were pickled and placed on sale here in the fall have now been almost all disposed of. We do not think there is 100 gallons left in or near the town. The demand for such olives is increasing from year to year and the time is coming when all that can be grown will find a ready market.

**LARGE CROPS.**—Chico Enterprise: Near Chico there are 250 acres of Bartlett pears which will bear 1500 tons; 500 acres of almonds that will yield 250 tons, and 1500 acres of prunes that will yield 3750 tons of dried fruit.

**BIG FRUIT YIELD IN PROSPECT.**—Biggs Argus: With the exception of apricots, the deciduous fruit crop will have to be thinned to avoid injury to the orchards. Apricots, however, will be short. The fruit shipment this year will be far in excess of any previous year, including oranges.

### CALAVERAS.

**THREE-HOOFED COLT.**—Citizen: G. Goodell of Paloma has a freak colt that was born last week. Its right hind foot has no hoof, the limb at the point where the hoof ought to commence being rounded off and covered with skin and hair. Otherwise the colt is sound and active and only for this defect would no doubt grow to be a valuable animal. Here is a chance for some veterinary surgeon to experiment with an artificial hoof.

### FRESNO.

**QUAKERS COMING.**—Democrat: Since last Friday there have been at Laton and other places in the county four Quakers, John L. Thomas, Lewis Pidgeon, Daniel Griest and W. A. Wilson, representing three "seven-year meetings" of the peace-loving people of the Far East and Middle West in a search for a home where all may congregate and they have selected in this county 2700 acres of land, which they will recommend to the friends in the East to locate on. Six years ago the search for a new home began. Colorado, Utah, Idaho and Wyoming were visited, but none gave satisfaction, and a few months ago these four men were chosen to come to California. Here their search has ended, they being satisfied with the land they have found here.

### GLENN.

**FRUIT CASE DECIDED.**—Willows Journal: In the case of Quong Sing vs. Gugenheim & Co. judgment was given Quong Sing for the full amount demanded. The case involved a complicated question as to the delivery of some hundred tons of dried fruit and the right to rescind a contract for failure of a delivery of a specified kind of fruit. The amount involved was several thousand dollars and was vigorously contested upon every point. The plaintiff, however, who resides in Willows, scored a victory upon every point. The case was tried in San Francisco.

### KINGS.

**CATTLE FROM MEXICO.**—Hanford Sentinel: W. J. Newport and Fernando Michel brought last week a train load of cattle from Mexico, which they loaded on the cars at El Paso. Among the lot were 600 cows, 50 of them having calves at their side when the train was loaded. When the train reached Guernsey, this county, where the stock was unloaded, there were 70 calves aboard, and during the whole trip only three calves died. The animals were taken off and turned out to pasture on the Heinen tract, south of Lemoore. The cattle are now in poor condition, feed being scarce in Mexico.

**THE ALFALFA HARVEST.**—Hanford Journal: Never in the history of Kings county have the prospects for alfalfa tonnage been so great as now. Several things have caused this. First, the failures of some of the southern counties of the valley to raise feed for their stock, as well as many of the coast counties, thus causing the shipment of thousands of head of stock into Kings county for feed. Then the drought in Arizona and New Mexico caused the price of horses and cattle to

depreciate, so that many of our stock buyers have bought and shipped thousands to Kings county to be prepared for the market. The increase in the dairy business has added many hundred milch cows to the pasturage. Our people are finding out that a ton of alfalfa hay that will bring \$3 when sold in the market is worth nearly twice that much when fed to growing stock or good milch cows.

**SHIPPING BUTTER EAST.**—Hanford Sentinel: Sunday the Kings County Creamery started Eastward an invoice of Kings county butter, amounting to 5000 pounds, part of which goes to Pueblo, Colo., and the balance to Topeka, Kans. Further arrangements are under way which may result in large regular shipments being made Eastward by this company.

### LOS ANGELES.

**SUCCESSFUL CITRON GROVE.**—Times: Dr. Westlake, who owns a large ranch in the foothills of Duarte, twenty acres of which is planted to Corsica citron, has been very successful in curing the peel for the market. The trees are only three years old, and the gross crop during the past season was 25,000 pounds. Of this, 17,000 pounds were cured, and he has refused 15c per pound for it. The fruit was packed in December and was prepared for market in Los Angeles. This is the largest orchard of Corsica citron in the United States; in fact, the fruit is not grown to any extent in any other locality.

### MONTEREY.

**ANGORA GOATS GOING EAST.**—Salinas Index: C. P. Bailey reports that his son Fred arrived last Friday at Ridgefield, Conn., with a carload of Angora goats from their Soledad ranch, which they sold to parties in the Nutmeg State for \$4000. The purchasers are going to try the experiment of raising goats on some of the "abandoned farms" of New England that have been overgrown with brush. If the industry proves successful, there will be a demand for all the Angoras that the Baileys have for sale.

### NEVADA.

**CHICKENS BY ELECTRICITY.**—Grass Valley Tidings: Mr. Thomas Thomas, the electrician, arranged a coil at the power house, and, fixing up a crude but suitable arrangement, placed a number of eggs where they would be kept continually warm, and awaited the result. When Mr. Thomas went to work yesterday he found that his eggs had come to life, and in their place was a dozen very pretty little chickens. Mr. Thomas has no idea of going into the poultry business, neither has he objections to other people taking advantage of his happy thought.

### ORANGE.

**MOUNTAIN LIONS KILLING HOGS.**—Anaheim Gazette: Mountain lions have recently been causing destruction to hogs and young stock in Trabuco canyon. Mr. Joplin lost eight large hogs by depredations of these beasts. Some weighed 200 pounds and all were full grown. Poison has been put out for them, and it is planned to organize a hunting party and scour the neighborhood for them.

**WALNUT SACKS FOR COMING CROP.**—The Golden Belt Co. of Fullerton has ordered 8500 sacks from Calcutta for the season's crop. The Fullerton Walnut Growers' Association has ordered 11,000 sacks.

**CABBAGE GROWERS' TRUST.**—Fullerton Tribune: The local Cabbage Growers' Association is determined to get out of the season's output "all the traffic will bear." There is only about one-eighth of a crop in Fullerton and Placentia and the market is becoming more active daily. The Association is selling its crop from week to week. Thomas Strain got last week's output at \$12 25 a ton, and the four cars marketed this week went to the Earl Fruit Co., its bid being \$19 a ton. The last of the crop will be moved next week and will also be sold to the highest bidder.

### SAN DIEGO.

**NEW BEE STANDS AND MORE HONEY.**—Union: San Diego county is noted for the large quantity and excellent quality of the honey she produces. The prospect of a good season has encouraged some Ramona bee raisers and facilities for producing their stands and facilities for producing the delicious nectar. J. H. Jacobson, who has 210 stands, has just finished the construction of about 200 more. He has all the up-to-date materials and appliances to produce and prepare the honey for market. In a few weeks the bees will swarm, and then will begin the filling of new hives with young colonies.

### SAN JOAQUIN.

**GOOD PRICES FOR ASPARAGUS.**—Lodi Sentinel: Joe Friedberger has received notice from New York that the asparagus which he sent there last week arrived in fine shape and that it brought \$4.50 per

box, which contains 24 pounds. The asparagus was pronounced by the inspector to be the best ever entered at New York.

### SANTA CLARA.

**PEACHES AND APRICOTS.**—San Jose Herald: The increase in acreage of peaches and apricots in the Santa Clara valley is very large, and shippers declare that with the coming of these new orchards into bearing, the output of the green fruit will astonish the whole State. The number of peach and apricot trees in bearing at the present time in Santa Clara county is estimated at 1,000,000. The increase in bearing fruit trees within the next three years will be about 50%, or 500,000 trees. These two varieties of fruit have received much increase in popularity because of the unsettled condition of the prune market.

**THE CHERRY CROP.**—Mercury: Prospects for an unusually large crop of cherries are excellent. The season has been very favorable for the development of this fruit. The trees are in a thrifty condition and the fruit is setting splendidly, leaving nothing to be desired save a continuation of favorable weather. These conditions apply particularly to cherries of the black variety, which promise to develop into a phenomenal crop.

### SANTA CRUZ.

**FRUIT NOTES.**—Watsonville Pajaronian: Up to 3 cents per pound are being offered here for blackberries for canning. At that price the blackberry is the best money maker among berries. It is going to be "go-as-you-please" in the strawberry markets this year. It is to be an open market, without any contracts or combinations to keep up prices. On March 31st a sale of 503 boxes of Banaz pack of Watsonville Newtowns was made in London, England, by Edward Jacobs & Co. at 12 shillings per box (about \$2.90), and 363 boxes, same pack of Newtowns, were sold at 11 shillings (or about \$2.65) per box. The best lot sold up to the prices paid for a car of fancy Oregon Newtowns. The crate is being used by some of our berry growers for San Francisco shipments. It is a package which is not returned, contains a much smaller amount of berries than a chest, and is easily handled. When berries get so cheap that it will not pay to "throw in the box" the old fashioned chest will come into use again.

### SACRAMENTO.

**FLORIN BERRIES AND GRAPES PROMISE BIG YIELD.**—Record-Union: Contrary to the general impression that the local shower of Wednesday last would work an injury to the strawberry crop around Florin, it will be of general benefit. Aside from the lateness of the season, conditions have been extremely favorable for a large crop. Vineyard work is progressing favorably and without injury from frost. Conditions point to a heavy yield of grapes in the Florin section.

### SOLANO.

**HALF AN ALMOND CROP.**—Suisun Republican: Several orchardists report that their almond crop will be short this season, owing to the falling of the blossoms. Some say there will be little, if any, more than half a crop.

**HATCH RANCH SOLD.**—Dixon Tribune: The well-known Hatch ranch in Suisun valley was sold this week to Eastern buyers for \$300,000. The place contains over 800 acres of the finest land in Suisun valley and is a valuable piece of property. It is said that A. T. Hatch was once offered \$700,000 for the place, but held it for \$1,000,000. It is reported that Eastern buyers are contemplating the purchase of the Dobbins ranch at Vacaville, another fine property.

### SONOMA.

**PLANTING TOBACCO.**—Santa Rosa Republican: R. A. Spencer, manager of a large tobacco plantation at Hermitage, near Cloverdale, states that something like eighty acres will be set to the fragrant weed in that section this season.

### SUTTER.

**FRUIT SETS HEAVY.**—Independent: From many of our fruit growers it is learned that fruit of all varieties, except apricots, will be unusually heavy, and much thinning will be necessary. The local cannery is making preparations for a big season's run, and it is doubtful that the Marysville and Yuba City plants can handle all the local crop, for not only will the crop be unusually heavy but many new orchards will bear for the first time this season.

**THE HONEY CROP.**—Sutter County Farmer: The honey crop of this county will be shortened this year on account of the loss of many hives during the flood and high windstorm of this winter. The bees are doing good work now getting honey from the fruit trees, willows and flowers in bloom, and as soon as this supply is exhausted will be moved to the

tules, where the "carpet grass" will furnish the best of product.

### TEHAMA.

**WOOL BRINGS GOOD PRICES.**—Red Bluff People's Cause: Considerable wool has changed hands in Red Bluff during the past week. The rivalry between the buyers has been keen. The highest price reported during the week is 16½ cents, which was paid for several clips. C. J. Gooch sold 105 bags at that price. Mandus Johnson received the same for his wool. John Finnell sold 200 bags to E. H. Tryon for 15 cents, Anton Nunes sold 28 bags at 15½ cents and William Nunes 38 bags at 15½. J. Sowlen sold 80 bags, Lewis & Soars 56 bags and Frates Bros. 38 bags at 15 cents; Ellison & Saunders sold their splendid clip at 16½ cents. The big clip of Cone & Ward, which is not yet taken from the sheeps' backs, was sold at 16½ cents. They will have about 200 bags. The fleece of D. S. Cone will comprise about 200 bags and was sold at 15½ cents. Black Bros., who had an exceptionally fine fleece, sold for 16½ cents. M. Heavy disposed of his wool before it was brought into town. The wool was all of an exceptionally good grade this season. The Bell & Moore clip and several other smaller ones are all that remain undisposed of.

**MUTTON WORTH MONEY.**—Sentinel: C. H. Johnson has been making heavy purchases of mutton in this county. He secured 1200 prime two-year-olds from G. B. Wilcox, many of them that will dress seventy pounds each, for \$3 50, and also 2000 from Cone & Ward at the same figure and 1000 from Mandus Johnson to be delivered in August at \$3 50. In all cases the sheep had been sheared. Mr. Johnson purchased 800 lambs from William Flournoy, to be delivered next fall.

### TULARE.

**THREE GOOD COWS.**—Register: M. L. Weigle received a check for \$24.27 from Tulare Butter Co., the product of the cream from three good cows on his place for the past month. These cows are from the family of a thoroughbred Jersey crossed with Durham stock, and while they do not give a great quantity of milk the milk they do give is rich with cream. The milk is separated at home and the cream taken to the factory. For feed the cows are getting alfalfa and foxtail with a straw stack to run to at night. Mr. Weigle says they eat at the straw nearly all night and are consequently not troubled with bloating. The \$8.09 per cow received for the sale of the cream is profit, the skimmed milk fed to hogs being a full compensation for the feed which the cows consume.

### VENTURA.

**A MAMMOTH BEET.**—Oxnard Sun: One of the largest sugar beets ever exhibited in Oxnard was brought in last week by G. M. Murphy from the field of Sing Gow, a Chinese farmer and gardener living near Hueneme. After being pulled from the tree and trimmed of all roots, dirt and a few old leaves, it weighed 72½ pounds.

### YUBA.

**SHIPPING WOOL.**—Wheatland Four Corners: Price Blackford has sold his entire spring clip of wool and finished shipping same last Saturday. He had in the neighborhood of 100 bales. We understand the sale price was 14 cents.

### OREGON.

**MONEY IN ONIONS.**—Ashland Tidings: Onion raising as a profitable branch of agriculture is assuming extensive proportions in the vicinity of Eagle Point. The success of last year has acted as an incentive to the planting of an increased acreage for the coming season and there will be about sixty acres devoted to the raising of the esculent vegetable. That this amount of land will produce an enormous yield under ordinary conditions is proved by experience of past years. From one and three-fifths acre one man raised 90,000 pounds of onions. Another cleared \$400 from considerably less than an acre of ground. At a low estimate the grower receives 1 cent a pound, and where nearly thirty tons are produced from one acre it requires but slight mental effort to see that there is money in onions.

## Horse Owners! Use

GOMBAULT'S  
**Caustic Balsam**

A Safe Speedy and Positive Cure  
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular.  
THE LAWRENCE-WILLIAMS CO., Cleveland O.



## THE HOME CIRCLE.

### The Planting of a Tree.

Wouldst thou upbuild a home where  
sweet wild lives are nested,  
Glad with the sound of song, quick with  
the flash of wings—  
Where the soft broods may rock, warm-  
housed and unmolested,  
Deep in the leafy nooks, through all the  
changeable springs?

Or wouldst thou rear an arch of noblest  
grace and splendor,  
Lifted in air and light, shaped by the  
sun and storm,  
Moved by the wandering wind, swayed by  
each influence tender,  
Yet by the hand of life molded to stead-  
fast form?

Wouldst thou make day more fair, and  
night more rich and holy,  
Winter more keenly bright, and sum-  
mer's self more dear—  
Grant the sweet earth a gift, deep rooted,  
ripening slowly,  
Add to the sum of joys that bless the  
rounded year?

Go, then, and plant a tree, lovely in sun  
and shadow,  
Gracious in every kind—maple and oak  
and pine.  
Peace of the forest glade, wealth of the  
fruitful meadow,  
Blessings of dew and shade, hereafter  
shall be thine!

For though thou never see the joy thy  
hand hath granted,  
Those who follow thee thy generous  
boon may share.  
Thou shalt be Nature's child, who her  
best fruit hath planted,  
And each of many a spring shall find  
thy gift more fair?

—Marion Couthony Smith.

### Charlton's Treasure.

The only secret in the household of Mr. and Mrs. John Amory did not belong to them, but had been intrusted to their keeping by Charles Charlton, an old friend of both, who was generally accounted a ne'er-do-well. "Charlie" Charlton, before he grew bitter, used to say, when anybody asked if there was such a thing as luck in the world, that there existed plenty of bad luck, as his career proved; and it is true that, despite certain advantages of birth and education, this young man was born, or appeared to have been born, under an unlucky star. His father was a rich man, and "Charlie" was his only child, yet the stern, taciturn and gloomy father never sought to win his boy's love and seemed not to demand his confidence. The boy, therefore, started handicapped in life despite material advantages.

"Until I was sixteen years old," the young man used to say, "I don't believe my father ever knew whether I went to school or not. He used to see me at breakfast and dinner, but never exchanged a dozen words with me at either meal. It hadn't been for poor old Margaret, who had charge of the house since my mother's death, he wouldn't have known if I needed clothes. But I did go to school—a public school—because all the other children in our block went, and if I had remained at home I would have died of loneliness. So I never missed a day. Much good my punctuality did me."

The elder Charlton was attorney for a few sober and safe corporations, and nearly every night closeted himself in his library with a mass of papers. As the railways and other institutions whose interests he safeguarded had their centers in the West, he was troubled with very little company, and until a taste for the theater developed in his son that youth used to dawdle about the kitchen, fall asleep in the dining room, and find the hour between dinner and bedtime distressingly long. During the period of his callow time Charlie began to try to copy pictures from the illustrated papers, and it was not long before he fancied himself an artist. With the first scratches of his untutored pencil old Margaret proudly proclaimed him a "born painter." In

fact, with considerable fear of result, but with determination, the faithful soul knocked at the library door one night and showed Mr. Charlton an example of his son's talent. The result justified her fear. The rugged old man pooh-poohed the effort, tore it up, and said: "Send him to bed; he can't waste his time so badly if he's asleep."

Shortly after this Charlie turned his eighteenth birthday, and his father sent for him to come into his library. Margaret was the messenger, and she found the lad sprawling over the dining table, with water colors mixed in the saucers and engaged in copying in color Da Vinci's "Last Supper"—no less.

"Your father wants you—what do you be doin'?" said Margaret all in one breath.

"Look at that," exclaimed Charlie, confidently. "Isn't it good?"

"The cloth is as like linen as two paze," said Margaret, admiringly, "but, ah, the mess you're makin'. Run away in with you. The master wants you."

"My father?"

"Yes, an' I think he'll be wantin' to send you to school."

"Bully!" said Charlie, rising hastily, and in his excitement overturning a saucer of paint on his coat. He wiped it off with a napkin, while Margaret scolded, lamented and advised all at once.

"Go and change your coat, there's a dear," she said.

"What's the use, Margaret?" answered the boy; "he'll never notice."

Mr. Charlton's proposition was to take Charlie into his law office.

"I suppose you can read and write," he said grimly, "and if you have any brains at all, I'll teach you to reason."

"Yes, sir. I can read and write," said Charlie sullenly (he was always at his worst in his father's presence), "but I don't want to learn the other thing."

"What, to reason?"

"No, sir, to be a lawyer."

"Probably you would like to go to college? Well, you can't. I don't believe in it. What do you want to make of yourself?"

"I'd like to be an artist," said Charlie.

"An artist—to draw pictures like the one Margaret showed me? Nonsense. Put that out of your head—it will never buy your salt. If you don't want to accept my offer I'll not force you. Stay on at the high school for a year longer, and then decide on what you'll work at, for I promise you you'll have to work. I did."

This ended the interview, an unsatisfactory one to both parties, for it convinced Charlie that his father hated him, and it confirmed the father in the impression that his son was a dunce. Its worst effect, however, was to bolster up Margaret's belief that her boy was a born painter. Charlie had some doubts about this until his father's rough speech; after that he felt positive that nature and fate both intended him to be an artist. Hitherto he had made but little progress under a process of self-tuition, which consisted mainly in copying from pictures and coloring his outlines "out of his own head." Now he decided to procure instruction, and surreptitiously he did so.

That was mistake number one in poor Charlie Charlton's career. A little consideration, a little sympathy, might have shown him the error he was making before too many years had been wasted, but his father gave him neither, and at twenty the boy had his way. Six months afterwards he opened a little studio, furnished it with the queer flotsam and jetsam of an artist's life, and began to paint. Mr. Charlton had agreed to allow his son a small income, and it was paid in to him promptly.

At this period Charlie, as everybody called him, seemed to be perfectly happy. It is true that he never, by any chance, sold a picture, but this was only a crumpled rose leaf, for Charlie used to laugh and say frankly that his works weren't worth a purchase.

A couple of years of studio life, some debts, of course, some complications, and then young Charlton made another mistake—the crowning one. When his fortunes were at their lowest ebb, he

married his own model. The elder Charlton, when he heard of this step, promptly stopped the allowance and cut his son's name out of his will.

That might have been endured, but the marriage itself was most unhappy. Nobody ever said a kind word about the young wife, but she may have been driven to it by poverty. At all events, she went on in the chorus of musical comedy, and, as her figure had grown too blowsy to serve any longer for an artist's model, it was, perhaps the only thing she could do.

But, if all that was reported was true, she found the temptations to lead a free-and-easy life too great to overcome. Young Charlton was asked to leave his studio, where he had difficulty to meet the rent, and all on account of the visits paid him by a boisterous wife.

After this sort of thing had been going on for a couple of years, Charlton, who had been best man at the wedding of the Amorys, went out to their modest little cottage at Scarborough, and seemed to be in a most depressed and sombre mood.

"I'm going to cut the whole thing, and try Paris for a year," he said to his friends. "I have a chance to get across on a cattle ship, and perhaps over there I'll learn how to draw. Everybody criticises my drawing."

"Are you going alone?" queried Rose Amory tremulously, for she hoped he was cutting his disgraceful wife as well.

"Oh, yes," said Charlton.

He spent the afternoon with the pair and remained to dinner. At its close, he handed John Amory a small package, like a jeweler's box, and said:

"This is my only treasure, and, as you two are my only friends, I'm going to ask you to take charge of it. Keep it safely for me for a year, will you? If at the end of that time I haven't reclaimed the box, destroy it."

John and Rose promised, and soon after Charlton took his leave, and his sympathetic friends had a chance to talk over his wasted life.

Rose's curiosity about the treasure was very great, and she fairly tingled to open the box and see what it contained; but John solemnly locked it up in a drawer in the tiny library table, and there it reposed for a year.

During the twelve months nothing was heard from Charlton, although his friends wondered sadly if he was getting on or growing poorer and more hopeless all the time. But towards the close of the year great events happened.

First the newspapers published accounts of the sad ending in Bellevue Hospital of Mabel Charlton, a once promising soubrette, and John and Rose knew, if few other people did, that one of the fetters of their friend had been broken by death.

Then they saw an advertisement for Charlie Charlton, or knowledge of his whereabouts, in one of the daily papers. About the same date they learned that old Mr. Charlton had died. They put the two facts together and came to the conclusion that the elder Charlton had forgiven his son on his death-bed.

Next day John Amory called at the lawyer's address, which had been given in the newspaper, and told about Charlton's intention to go abroad. He learned that what he had surmised was true, and a goodly inheritance had fallen to Charlie Charlton from his father.

"I will have the notice printed in the Paris journals," said the lawyer, "and no doubt we shall soon hear from the young man."

Greatly rejoicing, John went home to Rose. "Isn't it splendid, John?" she cried. "I don't know any one I'd like to see happy more than poor Charlie Charlton."

Then she thought for a moment and finally said: "The year is up. Can't we look at his treasure now?"

"But he will probably soon return now," said her husband. "Haden't we better wait until he does?"

"John Amory," said Rose, tragically, "I've waited a year to see what that box holds, and I can't contain my curiosity any longer."

The upshot of the argument was that in a few minutes Rose held the little

package in her hand.

"Do you suppose it contains a jewel?" she asked.

"Nonsense," said John. "If Charlie had owned a jewel of price it would have gone to the pawnbroker's long ago."

The outside wrapping was taken off and a small jeweler's box was revealed. On opening it, inside was found, reposing in cotton, what looked like an ordinary lump of sugar.

"It's a hoax!" cried Rose.

"So it looks," said John; "but why should Charlie have spoken so solemnly about it?"

"John," cried Rose, suddenly, "I wonder if it can be—"

Then she paused.

"What is it you are wondering?" asked John.

But Rose only looked thoughtful for a few moments. When she spoke again it was to say:

"I'll give Charlie Charlton a piece of my mind for fooling me so. If he does not return soon without knowing anything of his good fortune, I mean to tease him by keeping him in suspense. Promise me, John, that you will let me tell about the money his father left him. Promise you won't tell first."

John promised, and the treasure (?) was repacked again and locked up in the library drawer.

Next day, while Rose was out marketing, who should come in to John but Charlie Charlton, but looking so shabby, so old and worn that his friend was shocked.

"It's no use," said the traveler, "I can't get on. I never will have a chance. I've tried everything and can not earn enough to more than keep body and soul together. I'm a derelict."

John smiled to think that Charlie little knew his chance had come at last. He prayed for Rose to return and tell the good news, for, as he had promised to let her tell it, he meant to keep his word.

"Did you know your wife was dead?" he asked.

Charlton smiled bitterly. "A man must have sunk pretty low," he said, "when even that is good news. But I come for another purpose. I come for my box—my treasure. Have you got it still?"

"Yes," said John, unlocking the drawer and handing it to Charlton, who unwrapped it, took out the lump of sugar and solemnly swallowed it.

"Good-by, old man," he said to John, "I must be going; I don't want to die in the house."

"Die!" gasped John. "Then that was poison?"

"Yes," said Charlton, "a deadly poison; I will be gone in an hour; through forever with this miserable failure of a life. I wanted to take it a year ago, but I promised myself another trial. I have had it and failed. Good-by."

"You shan't go," shouted John. "Is there no antidote? Why, man, your father is dead. He left you all his money!"

Charlie Charlton's face turned livid. "Oh, if you had told me that a few minutes before—"

"I would, but I had promised Rose—"

"Rose—who is talking of me?" said that young woman, running into the room.

"Rose, Rose!" cried her husband, "he has eaten that lump of sugar!"

"Well, what of it?"

"It's poison!"

"Nonsense," said Rose, "it's not poison. Perhaps the one Charlie left here was; but this is out of my own sugar bowl. When I saw that lump of sugar I suspected something like this, so I just threw it into the fire and substituted another."

Charlie Charlton's color returned slowly. He drew a long breath, and cried devoutly:

"Thank Heaven!"

"You had better thank Rose," said her husband.—N. Y. Evening Post.

Citizen—Madam, why do you persist in punching me with your umbrella? Madam—I want to make you look round, so I can thank you for giving me your seat. Now, sir, don't you go off and say that women haven't any manners.



## A Maiden.

"Give me Love, O Lord," I cried—  
"Give me Love, though naught beside!  
I would know the way he wanders,  
For the world is wide."

Then I found him at my side,  
For my cry was not denied.  
And the narrow world has nowhere  
For my heart to hide!

—Elsa Barker.

## Silver Weddings.

Here are some suggestions which may be helpful for the twenty-fifth wedding anniversary, from Harper's Bazar: Send the invitations on silver paper, writing them in white ink, or on white cards, writing the invitation in silver ink. Have the decorations as "silvery" as possible, using silver paint liberally, as it may be all washed off afterwards. Paint wooden and china dishes to put on the refreshment table to supplement the silver vases you may have or borrow. Have a big basket made of silver paper in the center to hold the flowers, or a pasteboard box covered with silver paper, and have on the table the dates of the wedding and of the anniversary cut out of pasteboard covered with silver paper. For favors give to all the guests little baskets painted with silver paint, holding either chocolates wrapped in silver paper, which may be procured at any confectioners, or small silvery ferns growing, and tie the baskets with broad silvery white ribbons, with the dates of the wedding and of the anniversary painted on them in silver paint or ink. A good menu for an informal entertainment such as this will be: Bouillon, creamed oysters or lobster in the little pastry or paper cases which the confectioners sell, with a salad made of celery and apples cut in pieces and dressed with mayonnaise; and ices and cake. The ices may be served in paper cases, which should be covered with silver paper, and the cake decorated with silver candles and the dates of the wedding and anniversary. Coffee should be served in demi-tasses last of all. For entertainment, why do you not plan a series of tableaux, each to represent a scene in the life of the married couple? Get the young people to dress up in cloths of the fashions of the persons they will represent, and have the proposal, the marriage ceremony, etc. This is always a most successful wedding anniversary entertainment for such a small company. Or you can have a contest of any kind to amuse the guests—a Trip Around the World contest; or a left-handed game, where all have their right arm, on entering, put into a sling, and have to do all sorts of things with the left hand—draw a picture on a blackboard, sew a hem, write a verse from a poem, etc. This is great fun. An advertisement hunt, where the advertisements are cut from the papers and magazines, and without names. Let the prizes be appropriate—silver articles wrapped in silver paper.

## A Cipher Code.

A commercial traveler, well known in the cycle trade on both sides of the Atlantic, adds this to the collection of jokes on newly-made happy fathers. The hero is the manufacturer of the wheel which the narrator sells. Being compelled to go away on a business trip about the time an interesting domestic event was expected, he left orders for the nurse to wire him results according to the following formula:

If a boy: "Gentleman's safety arrived."

If a girl: "Lady's safety arrived."

The father's state of mind may be imagined when a few days later he received a telegram containing the one word, "Tandem."—Denver News.

"Now that our engagement is off," said the beautiful blonde, "I shall expect you to return my photograph and lock of hair."

"I'll return the photo," replied the young man in the case, "but I want you to understand that I'm not advertising myself as a hair restorer."—Chicago News.

## DOMESTIC ECONOMY.

## Domestic Hints.

**FRIED SWEETBREADS.**—Soak the sweetbreads in salted water one hour, and boil in the same water ten minutes. Remove the outside skin, and dip in egg and flour. Fry in hot butter a deep brown, season and serve.

**HAM TOAST.**—Chop a quarter of a pound of boiled ham and mix it with the well-beaten yolks of three eggs, one ounce of butter, two tablespoonfuls of cream, a little cayenne pepper; stir over the fire until it thickens. Spread on hot toast.

**PRUNE PUDDING.**—Cook a pound of prunes till quite tender. Remove stones and pick into tiny pieces. Dissolve two-thirds cup powdered sugar and two tablespoonfuls of gelatine in one cup of cold water and stir into the prunes. Add the whites of four eggs beaten to a froth. Bake twenty minutes and serve with cream.

**RHUBARB.**—Wash and cut in small pieces one pound of fresh rhubarb. Put in a baking dish with one cup of sugar, a cup of water, the thinnest possible shaving of lemon peel. Put two tablespoonfuls of gelatine to soak in cold water, and then dissolve it in a little hot water. Add to the rhubarb with a tablespoonful of lemon juice. Pour into a mould and let it harden on the ice. Serve with whipped cream.

**SPICED PEARS.**—Take one teaspoonful of whole cloves, one tablespoonful of allspice and one tablespoonful of lemon. Crush them slightly and boil one minute in a quart of vinegar and a pint of sugar mixed. Select a fine variety of pear, halve them, taking out the seeds, boil them in water until nearly tender, and finish them in the syrup, cooking them not too soft. Cover them well with syrup and place them in small stone jars. Tie a cover over the jar.

## Hints to Housekeepers.

A delicate preparation of oatmeal that an invalid will enjoy requires that the cereal shall be boiled first for about an hour, as if it were to be served for breakfast. Remove from the fire and rub it through a fine sieve. Add a little milk and cook it very slowly in a double boiler for half an hour longer. When perfectly smooth, flavor with salt, and add a very little cream before serving.

The following receipt to clean carpets has been tested, and found satisfactory: Boil together until dissolved eight ounces of borax, eight ounces of washing soda and three pounds of white soap in four gallons of water, four ounces of alcohol and two ounces of ammonia to one-half of the mixture as first prepared. After it is thus diluted, wipe the carpet over with this, using a scrub brush on stains and very dirty spots; afterwards wipe over with a clean cloth wrung out of clean water.

To sterilize milk first wash thoroughly with hot water and bicarbonate of soda the bottles to be used. Fill the bottles to the neck with pure, fresh milk. Cork them with absorbent cotton, and place in a pan or pot partly filled with cold water, taking care that there is not so much water as to prevent their standing firm. Bring the milk gradually to a boil; boil three minutes, and then stand the bottles aside to cool. When cold, prepare according to directions with sterilized water, milk of sugar, salt and lime water.

## Deafness Cannot Be Cured

by local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

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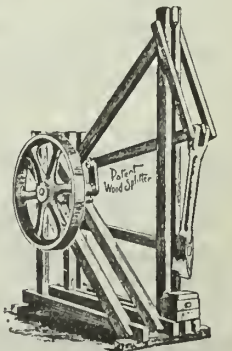
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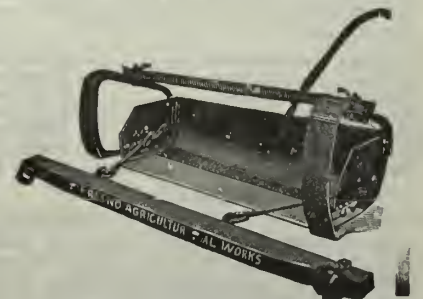
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## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, April 30, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday.....	74 1/2 @ 77	76 3/4 @ 78 1/2
Thursday.....	76 1/2 @ 75	78 @ 76 1/2
Friday.....	74 1/2 @ 73 1/2	76 @ 75 1/2
Saturday.....	74 1/2 @ 75 1/2	75 1/2 @ 76 1/2
Monday.....	75 1/2 @ 73 1/2	76 1/2 @ 75
Tuesday.....	74 @ 74 1/2	75 @ 75 1/2

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday.....	43 1/4 @ 44 1/2	36 @ 37 1/2
Thursday.....	44 1/4 @ 43	37 1/2 @ 38 1/2
Friday.....	43 @ 41 1/2	36 1/2 @ 35
Saturday.....	42 1/2 @ 42 1/2	35 1/2 @ 35 1/2
Monday.....	43 1/4 @ 42 1/2	35 1/2 @ 35 1/2
Tuesday.....	42 1/2 @ 42 1/2	35 1/2 @ 34 1/2

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 11 1/4 @ 1 11	1 09 @ 1 08 1/2
Friday.....	1 10 3/4 @ —	1 08 1/2 @ 1 08 1/2
Saturday.....	1 11 1/4 @ 1 11 1/4	1 08 1/2 @ 1 08 1/2
Monday.....	1 11 1/4 @ 1 11	1 08 1/2 @ 1 08 1/2
Tuesday.....	1 10 3/4 @ —	1 08 1/2 @ 1 08 1/2
Wednesday.....	1 11 1/4 @ 1 10 3/4	1 08 1/2 @ 1 08 1/2

## WHEAT.

The spot market for this cereal has not changed to any great extent since date of last report. Offerings by sample continue light and there is very little business being transacted in this center. The movement of wheat outward is of fair volume, all things considered, but shippers are either exhausting their own reserves or securing the wheat in the interior. There are no evidences of any large supplies remaining in the State. In the principal warehouses in the vicinity of San Francisco, including Port Costa and Stockton, the aggregate quantity of wheat is fully 25 per cent, less than a year ago, and it was of rather light volume at latter date. Ocean freight rates have recovered slightly, few ships being now obtainable under 25 shillings for wheat and barley cargoes to Europe, usual option as to final destination. Most of the deep-sea vessels now in port will wait for new crop rather than accept lower figures. While prospects are good for a liberal yield of wheat in this State, as also in Oregon and Washington, the outlook is not favorable for a heavy yield in the great wheat belt of this country east of the Rocky Mountains. Market closed quiet for spot, with options inclining in favor of the buying interest.

California Milling..... 1 12 1/4 @ 1 15  
Cal. No. 1 shipping, alongside..... 1 10 @ 1 12 1/2  
Oregon Valley..... 1 10 @ 1 12 1/2  
Washington Blue Stem..... 1 10 @ 1 15  
Washington Club..... 1 07 1/2 @ 1 10  
Off qualities wheat..... 1 05 @ 1 07 1/2

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	6s 2 1/2 @ 6s 2 1/2	6s 4 @ 6s 4 1/2
Freight rates.....	32 1/2 @ 35s	23 1/2 @ 25s
Local market.....	1 00 @ 1 02 1/2	1 10 @ 1 11 1/2

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.11 1/2 @ 1.10 1/2.
December, 1902, delivery, \$1.09 @ 1.08 1/2.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.08 1/2 @ 1.08 1/2; May, 1902, \$1.11 1/2 @ 1.10 1/2.

## FLOUR.

In the matter of quotable values there is no improvement to record, but more flour has been changing hands lately, especially on local account, than at any previous date for several months or more. Supplies in this center are not of particularly heavy volume, but at the same time are proving ample for all immediate requirements.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

## BARLEY.

While there has been a moderately active outward movement lately of this cereal, the shipments have either represented to a great extent previous purchases or have been secured at interior points, as the aggregate of sales here has been of rather small compass. Quotable

rates show no pronounced changes, but the tendency has been to easier figures than had been current, the granting of moderate concessions to buyers, if not the rule, being of quite common occurrence. Call Board prices averaged lower than preceding week, with trading in futures by no means active.

Feed, No. 1 to choice.....	95 @ —
Feed, fair to good.....	92 1/2 @ 95
Brewing, No. 1 to choice.....	96 1/4 @ 1 00
Chevalier, No. 1 to choice.....	1 10 @ 1 20
Chevalier, poor to fair.....	95 @ 1 05

## OATS.

There is no activity to report in the market for this cereal. Some holders are showing desire to unload, and are granting concessions to buyers, rather than miss sales, especially where transfers of fair magnitude are under negotiation. Indications are that values are more likely to soften than to harden during the balance of the current season.

White Oats, fancy feed.....	1 37 1/2 @ 1 40
White, good to choice.....	1 32 1/2 @ 1 37 1/2
White, poor to fair.....	1 27 1/2 @ 1 30
Gray, common to choice.....	1 27 1/2 @ 1 35
Milling.....	1 37 1/2 @ 1 40
Surprise, good to choice.....	1 40 @ 1 45
Black Russian.....	1 15 @ 1 27 1/2
Red.....	1 22 1/2 @ 1 37 1/2

## CORN.

Market is quiet, values continuing on a plane too high for dealers to take hold freely or for large quantities of this cereal to be consumed. Trade is almost wholly on local account. Offerings cannot be termed heavy, but are in excess of immediate demand at prevailing figures.

Large White, good to choice.....	1 45 @ 1 55
Large Yellow.....	1 35 @ 1 45
Small Yellow.....	1 45 @ 1 55

## RYE.

There is no noteworthy movement at present, either outward or locally. Values show no change, ruling steady.

Good to choice.....	90 @ 95
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## BUCKWHEAT.

In the absence of any recent business, so far as reported, values for this cereal are largely nominal. Offerings and inquiry are both lacking.

Good to choice.....	1 55 @ 1 70
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## BEANS.

The reduced figures lately established for Small and Large Whites, or Lady Washingtons, has at last resulted in some outward movement, and indications are that values have touched bottom for the time being. No great movement is observable in Limas, nor is there any disposition shown to force sales; there has been slight recovery in values from last quoted decline. In colored beans business doing is not of heavy volume and is mostly at full current figures, with offerings of rather light proportions. Market for Black-eyes remains against buyers, there being very slim supplies of this variety at present.

Pea, fair to good, 100 lbs.....	3 25 @ 3 50
Small White, good to choice.....	2 20 @ 2 40
Lady Washington.....	2 15 @ 2 30
Pinks.....	1 90 @ 2 10
Bayos, good to choice.....	2 60 @ 2 75
Reds.....	2 25 @ 2 50
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	3 50 @ 3 60
Black-eye Beans.....	4 50 @ 4 75
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

## DRIED PEAS.

Inactivity is still prevailing in the market for dried peas, both Green and Niles. Extreme figures quoted are more in accord with the views of holders than with prices obtainable in a wholesale way.

Green Peas, California.....	1 50 @ 2 00
Niles Peas.....	1 75 @ 1 80

## WOOL.

Little doing in the local wool market, most of the purchasing this spring having been done in the country. There is no great quantity offering in this center, particularly of desirable qualities. Quotable values remain nominally as last noted. Eastern markets are reported slow and not very firm, due largely to recent strikes among woolen mill employees.

## SPRING.

Northern Cal., free.....	15 @ 16 1/2
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	12 @ 15

## HOPS.

In the local wholesale market the same inactivity prevails as previously noted. There are few hops offering from first hands, and for these there is little call from jobbers. In a wholesale way it is doubtful if over 15c. could be realized here, certainly not for other than some-

thing very fancy. Jobbers quote up to 17 1/2c. There is some disposition to contract for coming crop within range of 11 @ 12 1/2c. for choice to select. The Eastern market is thus summed up under recent date in a New York review: "Considering the smallness of the stock of hops in this country and the fact that we have before us more than four months of the best part of the brewing season, holders are pretty well satisfied with the amount of business that has transpired this week. Brewers are buying mostly against current needs, but any movement on their part to secure larger supplies would be felt at once in a higher market. Dealers make occasional purchases, but they find stock offering with much reserve and very full prices asked. State hops are getting very scarce and hold the strongest position at present, but Pacifics are crowding them closely. Our quotations, 17 @ 19c. for prime to choice, cover the business doing, with the exception of an occasional lot to brewers on long time. The country is being scoured for 1900 and older hops, and when such are found they are taken at very full rates. From recent advices from this State it is doubtful that there are over 400 bales left in growers' hands. The last lot of Sonomas sold this week to come to New York. In some sections of California, and in Oregon and Washington, a few thousand bales are still left in growers' hands, and Eastern dealers are holding some lots on the coast, presumably to cover contracts for later delivery."

## HAY AND STRAW.

Market for hay is presenting a rather easy tone, offerings of most descriptions being fully up to or ahead of immediate demand. Buyers in most instances are taking hold slowly at full current figures. For Alfalfa and Clover values are as a rule being better maintained than for most kinds of stable hay.

Wheat, good to choice.....	9 00 @ 11 50
Wheat and Oat.....	8 50 @ 11 00
Oat, good to choice.....	8 00 @ 10 50
Barley.....	7 50 @ 9 00
Alfalfa.....	8 00 @ 11 00
Clover.....	7 00 @ 9 00
Compressed.....	9 00 @ 11 50
Straw, 1/2 bale.....	40 @ 50

## MILLSTUFFS.

Bran was not in heavy receipt and was rather firmly held, but demand at full current figures was of a slow order. Business in Middlings and Shorts was at much the same prices as last quoted, with stocks and inquiry both light. Market for Rolled Barley and Milled Corn showed tendency to slightly easier figures.

Bran, 1/2 ton.....	16 00 @ 17 00
Middlings.....	18 00 @ 20 00
Shorts, Oregon.....	17 00 @ 18 00
Barley, Rolled.....	20 00 @ 21 00
Cornmeal.....	28 50 @ 29 50
Cracked Corn.....	29 00 @ 30 00

## SEEDS.

Market for the several kinds quoted herewith is showing much the same general condition as previously noted, quotable values being without material change. Not much arriving of any sort, and spot supplies are too light to admit of any heavy trading.

Alfalfa, Cal.....	— @ —
Alfalfa, Utah.....	— @ —
Flax.....	2 25 @ 2 50
Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 50 @ 2 65
Canary.....	3 1/4 @ 3 1/2
Rape.....	1 1/4 @ 2 1/4
Hemp.....	3 1/4 @ 3 1/2

## BAGS AND BAGGING.

A very fair business is reported in Grain Bags, with prospects of increased demand in the near future. Market is tolerably firm at the quotations, and is not likely to be lower prior to or during harvest. Wool Sacks are ruling quiet, the season's demand having been about satisfied.

Calcutta Grain Bags, buyer June-July.....	6 1/2 @ 6 1/4
Calcutta Grain Bags, spot.....	6 @ 6 1/2
San Francisco Grain Bags, 22x36, spot.....	6 @ 6 1/2
San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	8 1/4 @ —
Gunnies.....	— @ —
Bean Bags.....	5 1/4 @ 5 1/2
Fruit Sacks, cotton, three sizes.....	5 1/2, 6, 6 1/2
Fruit Sacks, Jute.....	7 @ 7 1/2

## HIDES, PELTS AND TALLOW.

There is a little better tone to the Hide market, in consequence of improvement East, but prices here for sometime past have been relatively stiffer than on the Atlantic side. Pelts have been in moderate request at generally unchanged figures. Demand for Tallow has been sufficient to promptly absorb all desirable offerings at full current rates.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not

always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 55 lbs.....	10 1/2 @ —	8 1/4 @ —
Medium Steers, 48 to 55 lbs.....	9 @ —	7 1/4 @ —
Light Steers, under 48 lbs.....	8 @ —	7 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	7 @ —
Light Cow Hides, under 50 lbs.....	8 @ —	7 @ —
Stags.....	6 @ —	— @ —
Wet Salted Kip.....	8 @ —	7 @ —
Wet Salted Veal.....	9 @ —	7 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ —	14 @ —
Dry Kip and Veal, 11 to 16 lbs.....	14 @ —	12 @ —
Dry Calf, under 4 lbs.....	17 @ —	15 @ —
Salted Horse Hides, large.....	2 75 @ —	— @ —
Salted Horse Hides, medium.....	2 25 @ —	2 50 @ —
Salted Horse Hides, small.....	1 25 @ —	— @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, medium.....	1 50 @ —	— @ —
Dry Horse Hides, small.....	1 00 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 1/2 skin.....	80 @ —	1 20 @ —
Pelts, medium, 1/2 skin.....	65 @ —	75 @ —
Pelts, short wool, 1/2 skin.....	40 @ —	60 @ —
Pelts, shearling, 1/2 skin.....	15 @ —	30 @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good medium.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/4 @ —	— @ —
Tallow, No. 2.....	4 1/4 @ —	4 1/2 @ —
Goat Skins, perfect.....	30 @ —	37 1/2 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

## HONEY.

Business in this line is not very extensive at present. While no special changes in quotations are warranted, the market is not firm. Owing to heavy offerings of new crop being anticipated at an early day, buyers are proceeding very slowly, expecting to be able to purchase to better advantage a little later on.

Extracted, White Liquid.....	6 @ —
Extracted, Light Amber.....	4 1/4 @ —
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	10 @ 12 1/2
Amber Comb.....	7 @ 10
Dark Comb.....	6 @ 7

## BEESWAX.

Not enough offering to admit of any active trading. Quotable values remain as before.

Good to choice, light, 1/2 lb.....	25 @ 28
Dark.....	24 @ 25

## LIVE STOCK AND MEATS.

Market for Beef is showing decided firmness, and is not likely to soon rise materially lower. Values for Mutton are being fairly well maintained at previously quoted range, supplies of desirable qualities not being excessive. Neither Veal nor Lamb are in heavy receipt. Veal is commanding much the same figures as for several weeks past. Quotations for Lamb show a reduction. Hogs are in light receipt and market firm, demand at full current values being fully up to the supply.

Beef, first quality, dressed, net 1/2 lb.....	7 1/2 @ 7 1/2
Beef, second quality.....	7 @ 7 1/2
Beef, third quality.....	6 1/4 @ —
Mutton—ewes, 8 @ 8 1/2 c; wethers.....	8 1/4 @ 9
Hogs, hard grain fed, 125 to 200 lbs.....	6 1/4 @ 6 1/2
Hogs, small, fat.....	6 1/4 @ 6 1/2
Hogs, large, hard, over 200 lbs.....	6 1/4 @ 6 1/2
Hogs, soft or acorn fed.....	5 1/4 @ —
Hogs, country dressed.....	7 1/4 @ 7 1/2
Veal, small, 1/2 lb.....	8 @ 9 1/2
Veal, large, 1/2 lb.....	8 @ 9
Lamb, spring, 1/2 lb.....	10 @ 10 1/2

## POULTRY.

The market has inclined more against sellers than during preceding week. Receipts of California product were not large, but there were heavy arrivals of Eastern poultry. All kinds of California stock, young and old, met as a rule with slow sale and went at materially lower figures than had been ruling. Best prices were, of course, realized on young fowls of desirable size and in fine condition. Very small young and poor old received little attention from buyers, even at low figures.

Turkeys, dressed, choice.....	— @ —
Turkeys, alive, Hens, 1/2 lb.....	15 @ 16
Turkeys, alive, Gobblers, 1/2 lb.....	13 @ 14
Hens, California, 1/2 dozen.....	3 50 @ 4 50
Roosters, old.....	3 75 @ 4 00
Roosters, young (full-grown).....	6 00 @ 7 50
Fryers.....	4 50 @ 5 50
Broilers, large.....	3 50 @ 4 50
Broilers, small to medium.....	2 00 @ 3 00
Ducks, old, 1/2 dozen.....	4 50 @ 5 00
Ducks, young, 1/2 dozen.....	5 50 @ 6 00
Geese, 1/2 pair.....	1 25 @ 1 50
Goslings, 1/2 pair.....	2 25 @ 2 50
Pigeons, old, 1/2 dozen.....	1 75 @ —
Pigeons, young.....	1 75 @ 2 00

## BUTTER.

There is not much inquiry from outside points at present, but there is no lack of local demand. Dealers are anxious to pack and store against future needs, having had little opportunity to do anything of consequence in this line thus far this season.

Creamery, extras, 1/2 lb.....	19 @ 20
Creamery, firsts.....	18 @ 19
Dairy, select.....	18 @ 19
Dairy, firsts.....	17 @ 18
Mixed store.....	15 @ 16

## CHEESE.

New is offering in sufficient quantity to cause market to incline in favor of buyers,



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FOR THE WEEK.	Since <i>July 1, 1901.</i>	Same time <i>last year.</i>
Flour, $\frac{1}{2}$ sacks.....	5,548,801	5,446,761
Wheat, centals.....	9,023,016	6,888,802
Barley, centals.....	5,894,913	3,364,072
Oats, centals.....	782,135	588,090
Corn, centals.....	103,276	97,299
Rye, centals.....	266,216	110,972
Beans, sacks.....	658,684	532,656
Potatoes, sacks.....	1,251,597	1,378,776
Onions, sacks.....	182,600	157,019
Hay, tons.....	125,593	141,515
Wool, bales.....	56,722	41,132
Hops, bales.....	8,879	8,282

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697,802.—ORE CRUSHER—A. C. Calkins, Los Angeles, Cal.  
697,806.—FOLDING CRATE—B. J. Casterline, Olalla, Or.  
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697,634.—CAN OPENER—F. Kotick, Little Rock, Wash.  
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## THE IRRIGATOR.

### The Stave and Binder Flume.

Successive years of water scarcity throughout the West have induced engineers and others, who are interested in the handling and conservation of water, to give careful consideration to the improvement of some of the older methods of hydraulic construction. In proportion as the more easily available sources of water are appropriated, will the future development of water supply tax the ingenuity of the engineer to design safe, permanent and economical works for the diversion of water and its conveyance over difficult routes and through long distances to the place of use.

In spite of its makeshift character, its many faults and inherent weaknesses, no design for any form of open-topped conduit has been made for conveying water on a grade line along steep mountain sides, so cheap in first cost, so easily and quickly built and so readily adaptable to a wide range of conditions and services, as the all-wood box flume. Any form of structure which retains the chief advantages of

built in 1892, 1½ miles in 1895 and the remainder in 1896 and 1897. The two first mentioned were built of redwood staves and for irrigation purposes; the other flumes of this type were built of Oregon fir staves.

With one exception, these flumes were allowed to stand for long periods of time in a perfectly dry condition, with no care or attention of any kind; nevertheless, the work of clinching up bands and rounding out the staves, which work put the flumes in first-class condition, cost only 4 cents per lineal foot of flume. Whenever this type of flume has been used in a normal manner, the total cost of maintenance, operation and repairs for flumes of from 15 to 30 square feet area has been less than 2 cents per lineal foot per annum.

In the use of a new type of flume, as might be expected, some defects of design have developed; but these were entirely defects of particular designs, and not of the type. Taken as a whole, the nine years of experience with this flume, under extremely unfavorable and under some favorable conditions, have shown that it meets every requirement of durability, cheapness of maintenance, ease and convenience of repair, water tightness and low first cost.

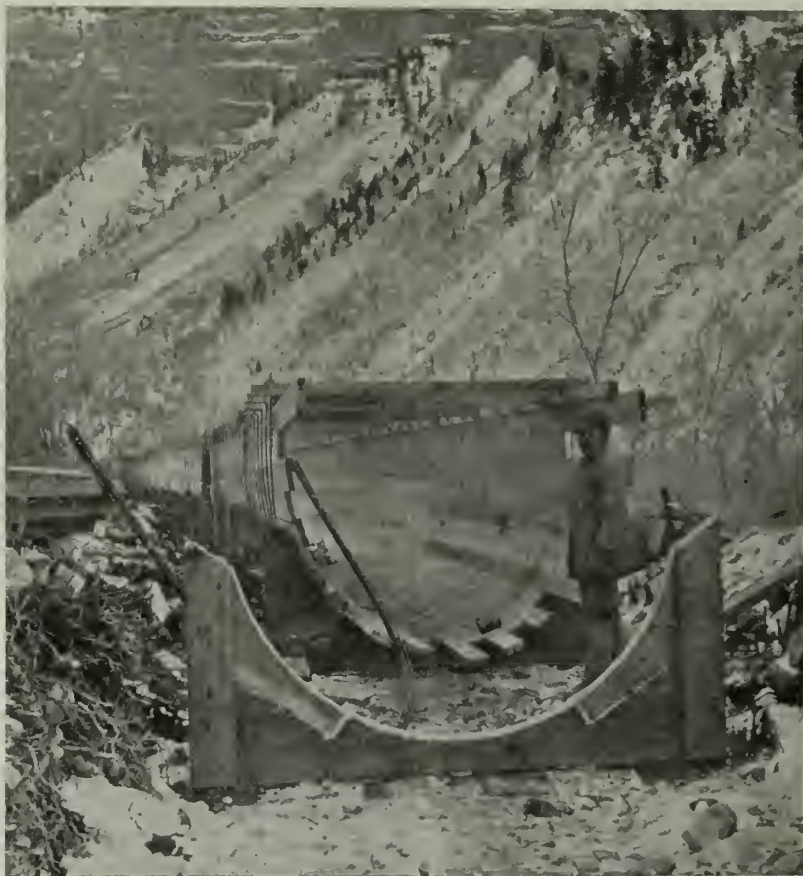


Fig. 1.—The Stave and Binder Flume of Guy Sterling.

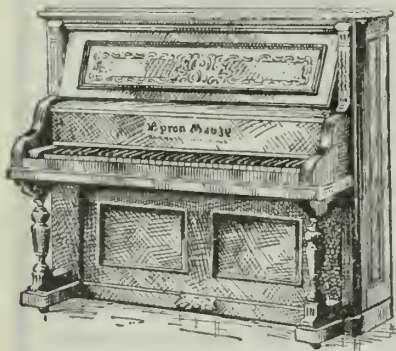
the box flume and is at the same time free from many of its objectionable features will be of interest to engineers and users of waters in general.

In the round-sided stave and binder flume, patented by Mr. Guy Sterling of Salt Lake City, a type has been designed which is entirely free from the faults objectionable in the box flume. In the round-sided flume the materials—wood and iron or steel—are combined in an economical and self contained manner for the purpose in view. This flume may be described as a round-sided, or semi-circular or partially round-sided, open-topped conduit, composed of staves and tie beams, the latter spanning the top of the conduit, and binding rods or bands which pass around the staves and through the ends of the tie beams and are adapted to bind the whole firmly and tightly together. In Fig. 1 is shown a view of the flume, which clearly illustrates the mode of construction, which is more like that of a wooden stave pipe than a box flume. Under comparable conditions, whatever advantages or disadvantages pertain to the wooden stave pipe would seem to pertain with equal force to the semi-circular flume.

Of this round-sided flume about 6 miles have been built, all of which is in successful operation. Two miles were

In the shell or lining of this flume no nails are used; its parts are held in place by the binding action of the tie beams and bands. The flume may be supported by wooden chairs, as illustrated in Fig. 1, or preferably, by iron chairs, as shown in Fig. 2. Where the circumstances will permit, no better support can be devised than earth tamped firmly around the sides.

The setting up of the flume is simply made. Two chairs, or outside forms, are set up, and in these the flume staves are laid, with their adjacent ends falling 2 or 3 feet forward or back of each other, thus forming a "stagger" joint. When all the staves required to fill a section are put in place, the bands, tie bands and washers are put in place and the nuts on the ends of the bands are turned down, thus binding the staves together. As the bands are drawn tighter and tighter, the staves are rounded out with leather-faced mallets, until the inside of the shell is smooth and the longitudinal seams between the staves are closed. Iron tongues, 1½ inch wide, ½ inch thick, and a little longer than the stave is wide, are next driven into the grooves cut into the ends the staves for that purpose. Then another outside form, or chair, is set up and the staves of the next section are put in



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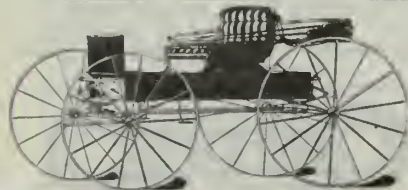
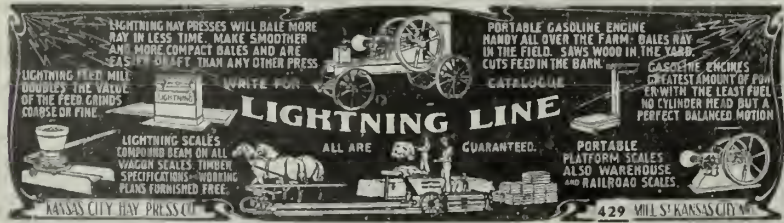


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place, the staves being so held that the tongues already inserted in the ends of the staves of the completed section can enter the grooves, or slots, in the ends of the next section. The joints at the abutting ends of the staves are then closed by driving up the staves with a wooden driving bar and heavy hammer, by which operation their joints are made water and air tight.

Under fair conditions, a well trained crew of two or three men and a foreman will build from 75 feet to 150 feet of flume per day, depending upon the size of the flume and the character of the alignment.

On curved alignment the flume is built straight out on the tangent to the curve and is then bent, as a whole, by special power appliances, to fit the curve. In this manner flumes of 6 feet inside diameter have been bent to curves of 80 feet radius. For such large flumes, however, the radius of curvature should not be less than 200 feet. When curves of shorter radius are unavoidable, the flume can be mitered to fit them.

The best material for staves is Cali-

area, the box flume has about 10% less carrying capacity than the round-sided flume by reason of the difference between their respective hydraulic radii. The box flume requires 45% more wood—a perishable material—than the half-round flume. The first cost of the box flume will be about 10% more than that of the round-sided flume. As no nails or screws are used in the lining of the round-sided flume, the flume will be likely to have a long life.

In flumes of greater area than 13 square feet, the difference in the hydraulic radii and the relative quantities of lumber required are more in favor of the round-sided flume than shown above, while for smaller flumes these differences tend to disappear.

The respective fields occupied by flume and pipe conduits seldom overlap, for when it is practicable to carry the water in an open-topped conduit, the flume, on account of its lower first cost, will be preferred; but where water has to be conveyed across deep canyons or around steep cliffs, requiring high and expensive trestles if flumed, the pipe will have the lower costs and some constructive advantages.

## METEOROLOGICAL.

### Coal Versus Climate in California.

Prof. McAdie, in the monthly publication of the Weather Bureau, writes interestingly upon the above subject.

want warmth and light you can dig it up; but when the digging of the black coal dwindles, hand-to-mouth diurnal dependence upon sunshine and showers for the "white coal" that must largely take its place will be a mark of the highest economy and best efficiency on the part of our engineers.

We would call attention to Mr. Martin's allusion to the bounty of the blue sky and fleecy cloud. California faces the Pacific ocean. The long stretch of coast line of the State, in length corresponding to that portion of the Atlantic seaboard between Boston and Savannah, breasts the ever-moving stream of air from west to east in these latitudes. This steady easterly drift of the lower air means a ceaseless conveyance of large amounts of water vapor from ocean surface to the mountain side. The streams of the Sierra have their birth in the condensation of this water vapor, and thus, in a way more direct than any other known at present, the heat of the sun is utilized by man. There are but two intermediate steps in the operation—first, the evaporation, and, second, the condensation. Thus the cloud and the fog are simply agencies for storing and conveying solar energy. It may be rather a novel comparison, this of the fleecy cloud and the gray fog bank to the sooty coal, but where is the difference, save that in the case of the latter the sunshine falling on the leaf of the tree is buried for long ages underground, and only slowly set free from its prison of coal by combustion, while with the

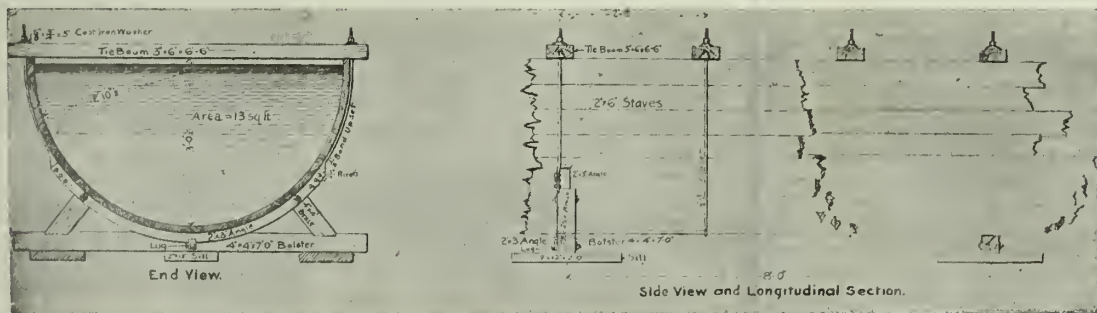


Fig. 2.—Details of Construction of the Sterling Flume.

fornia redwood or Washington cedar; when these cannot be obtained, Oregon fir or Texas pine can be depended upon for good results. Wood which is free from knots will give the best service, although the so-called "common" grade of Oregon fir has been used for this type of flume and is given satisfaction.

Owing to the variable conditions controlling the cost of all flumes, it is difficult to make a statement of comparative costs for the box flume and the round-sided flume which will have anything like a general application. The quantities of material required for a flume of each type, the areas being equal, will convey an idea of the comparative costs.

Flumes of 13 square feet area and 16 feet long require, if made in the half-round design just described, for a 16-foot length, 444.5 feet of lumber and 96.91 pounds of metal. The same cross-section of water flow area made in the form of an ordinary box flume will require 646.5 feet of lumber and 10 pounds of metal.

For flumes of about 13 square feet

He says: Up to the present time California has been handicapped in the race for industrial supremacy by the lack of cheap good coal or other fuel. It matters little that a great city fronts a noble bay unless fuel for the industries of the community can be obtained at reasonable prices and in sufficient quantity. San Francisco may sit beside the Golden Gate, but in order that the city shall fulfill its destiny as one of the great ports of the world the present inadequacy of fuel must be remedied. The rapidly increasing use of oil in manufacturing establishments, and also aboard vessels, gives promise of solving the difficulty. There is also another way of obtaining a supply of power, and this is by the utilization of the water power of the mountain streams in the transmission of electrical energy. It is, therefore, pleasant to read in the March issue of the Review of Reviews the following remarks of Thomas Commerford Martin, calling attention to the rapid extension of long distance power systems in California. After commenting upon the compensatory plan of Providence which gives the British Islands coal beds in lieu of sunshine, and California more sunshine than coal, Mr. Martin continues:

Whether it is better for a country to live on its geology or its geography has remained hitherto a moot question; but usually coal mining regions have little to recommend them as places of residence after the deposits are exhausted. Newcastle and Pittsburg have no vogue as pleasure resorts, but long after their pits and volcanoes of pent-up energy, hushed and empty, lie in black silence, picturesque Switzerland and Californias will be drawing cheerfully upon the renewed bounty of the daily blue sky and fleecy cloud. The chief future of China appears to consist in its supply of black coal, but when that, in turn, is worked out, the melting glaciers of the Jungfrau, the bubbling streams of the snow-clad Sierra, and the rushing tide of the Niagara gorge, will still be here, to give up to us not alone their beauty but their strength. It is doubtless satisfactory to know that if you

cloud the heat of vaporization in a reservoir of rare design, high above our heads, is set free in the beauty of the waterfall.

Snakes, centipedes and other poisonous things may assail you in your walks through field and forest. Be sure to have a bottle of Perry Davis' Painkiller in the house and you run no risk. Directions on the wrapper.

### Shakespeare Never Wrote Macbeth.

We can state this as a positive fact, because the poet lived in a time when the lamp chimneys made by MACBETH were unknown.

If Shakespeare had lived in our day he would have written MACBETH, Pittsburgh, that "pearl top" or "pearl glass" lamp chimneys never break unless you hit them, just as thousands of men and women write from all over the globe.

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This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

## F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

## SPRINGTIME

is the time to place these supports on your trees.

**PAT. NOV 26, 1901.**

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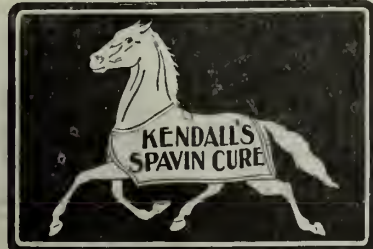
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**Cured Spavins of Ten Years' Standing.**  
Earlville, N. Y., Mar. 11, 1901.  
Dr. B. J. Kendall Co., Gentlemen:—Some years ago I used your Kendall's Spavin Cure on a horse that had two lions Spavins, and it removed them entirely. These Spavins had been on him from birth, and were of ten years' standing. I now have a case of a mare that was injured by falling through a bridge, and am going to give her complete treatment with your Spavin Cure. Very truly yours, CLARK O. FORT.

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## FRUIT MARKETING.

### A Fruit Shippers' Combine.

The community of interest idea, says the S. F. Chronicle, has taken possession of the big deciduous fruit shippers of the State, and a plan of organization is being formulated with the idea of eliminating needless competition in the East during the approaching green fruit season, controlling the various Eastern markets and exploiting new markets in this country and abroad.

The scheme of organization was discussed at length at a meeting held at the Palace Hotel recently, attended by shippers controlling 95% of the green deciduous fruit that moves from California to the Eastern markets. All of the big fruit-shipping companies were represented, together with several of the small companies and the most prominent of the individual growers and shippers. In the latter class are Frank H. Buck of Vacaville; Alden Anderson of Suisun and A. Block of Santa Clara. The Porter Bros. Co. was represented by President James S. Watson, who is here from Chicago to promote the community of interest plan, and A. J. Hechtman of this city, vice-president of the company. W. E. Gerber and G. B. Katzenstein were down from Sacramento to represent the Earl Fruit Co., and representatives were present from the Producers' Fruit Co., the Penryn Fruit Co., Pinkham & McKevitt, Schnable Bros., George B. Kellogg and W. J. Wilson & Son.

The fact leaked out Friday last that the proposition to bring all of the fruit shipping interests together in an organization such as that outlined has been under consideration for some time, but it was not until Friday that the shippers got together to formulate plans for the launching of the big project. At the close of the meeting the information was given out that the situation had been carefully and thoroughly canvassed and that another meeting would be held on Wednesday or Thursday of this week to perfect the details in the plan of association or organization.

Those identified with the plans and projects of the fruit shippers were much concerned last Friday evening lest their purposes be misunderstood by the fruit growers of the State. They would have it understood that whatever form of united action might proceed from their meetings it would in no sense assume

the character of a combine of the shipping interests. Their efforts were all designed, they said, as much for the interests of the growers as for the interests of the shippers.

"The fruit growers and shippers of California are confronted with exceptional conditions this year," said the representative of one of the big fruit companies, when questioned about the plans of the shippers. "Last year the shipments of deciduous fruits to the Eastern markets aggregated 5700 carloads. It was a prosperous season for the growers and shippers, but the results were not sufficient to make anybody rich. This year we are confronted with the prospect of 8000 or 10,000 carloads of fruit, and, unless we can secure some concerted action in marketing the product, the season is likely to prove disastrous through a slump in prices. The shippers have accordingly come together to consider the problem of widening the markets and extending the distribution of the product. We will have to exploit new markets throughout the country, and may even go abroad to sell a portion of the crop. These things can only be done by united action. One shipper is not going to the expense of exploiting a new market only to have the advantages of efforts in that direction shared by all of the other shippers. At the same time there is a distinct advantage to be gained for both shipper and grower in regulating and controlling the distribution of fruits in the markets already established. If New York will consume not more than twenty cars of fruit, it is ruinous for a dozen rival shippers to dump fifty cars on the market at one time. These matters can be regulated by concerted action.

"Just what form the association or organization will take it is impossible to say at this time. We have reached only the preliminary stage. Shippers representing 95% of the deciduous fruit crop have come together and talked over the situation, and we hope to make further progress in the direction of organizing at our meeting next week. Whatever benefits may accrue through the combined efforts of the shippers will be shared by the growers, for our one purpose is to find a market for the entire crop at good prices."

The thrust of a lance does not hurt more than the abdominal pains following the eating of improper food. Quick relief comes with the use of Perry Davis' Painkiller. Always keep it in the house.

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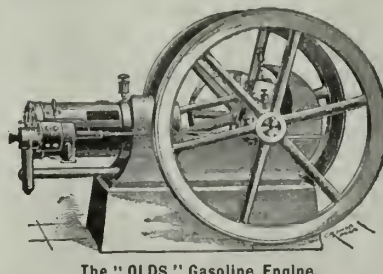


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## RANGE INTERESTS.

## The Old in California Cattle Growing.

In view of what appears upon our first page this week about present cattle interests in the San Joaquin valley, the following sketch from the Denver Field and Farm is interesting, even if slightly colored in some respects:

From the days that the Franciscan monks brought to California a few cattle away around Cape Horn from their old homes in Spain, and taught the native Indian tribes how to become Christian husbandmen, to 1855, the increase in the herds was marvelous, notwithstanding the tens of thousands that were slaughtered every year. It was estimated in 1855 that there were over 1,200,000 head of cattle in California, valued at from \$10,000,000 to \$12,000,000. In the Spanish days when a man's herd increased so that it was too much bother to keep it together and to provide grazing land, the owner allowed his stock to run wild, with the result that the animals lost all domesticity and were extremely difficult to round up—so much so, in fact, that many heavy owners took slight pains to keep their herds intact, merely rounding up those that could be found and driven in with the least trouble. As a result of this lax system, before many years in isolated portions of the country there were enormous herds with no one to claim them.

The manner of life and of doing business of the Spanish cattle kings in their halcyon days was unlike anything that other cattlemen ever knew. Book accounts were rarely kept, and except when the annual rodeo took place not the least attention was given to the increase in the herd. No ranchero ever made any study of the market conditions before disposing of his cattle. When the family purse was empty, when a daughter was to receive a dowry, or a son must have money to pay off a gambling debt at San Francisco or Sacramento, the vaqueros were sent out and a herd of long-horned steers was driven to the seaboard to be exchanged for the Yankee or the English sailor's gold. There was no bargaining as to price. Life was too short for that and the brusque commercial manner of the buyer was distasteful to the Spanish seller. Besides, the cattleman knew that he had a vast number more of such steers back in the country.

With all their herds, the Spanish families seldom had butter in their ranch homes and cheese was obtainable only from the sailors. Olives and olive oil were used in lieu of milk products. They were easier to procure. Mutton and beef fat were in abundance, for they, too, were easy to obtain. Rich as the Spanish cattlemen were, their diet was of limited variety, but abundant in quantity. Claret, beef, mutton, honey, bread, olives and grapes were the chief staples in every home. In 1868 there were less than a dozen of the cattle kings of early California days left in the cattle business. A large number of them had been sold out by the sheriff and their property taken under mortgage foreclosure. In 1870 the last big herd of cattle owned by Spaniards was sold.

Now the days of big herds of cattle under the American regime are fast passing away. The agriculturalist has demonstrated the marvelous capabilities of the soil of California and has taken many thousand acres formerly used for cattle purposes. The railroads have cut through the immense valleys where King Steer roamed at will twenty years ago and cities and towns have sprung up in the very heart of the best grazing lands in the State. With the influx of settlers and the subsequent decrease of grazing facilities the big herds began to partake of the nature of white elephants. It was impossible to keep them near home and the conditions beginning to obtain were such that they could not be permitted to roam at will, so many owners were obliged to subdivide their herds and sell off the surplus, retaining only such portions as could be maintained on the home rancho.

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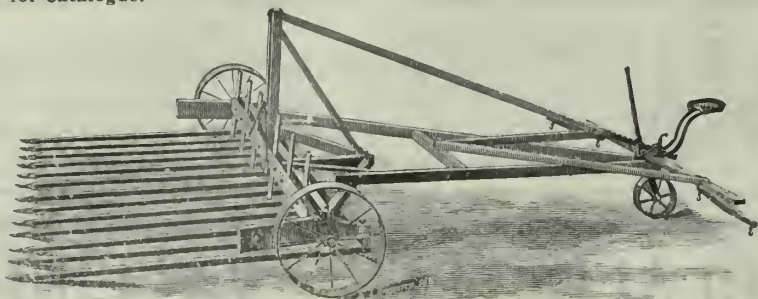
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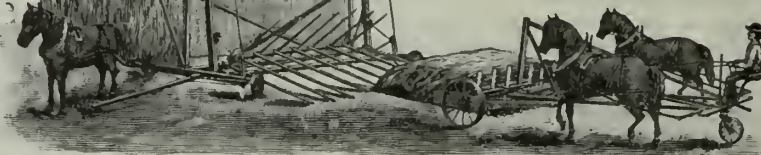
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We make this machine under the "Acme" and Oliver patents. It is mounted on cast-iron shoes, and will build a stack 25 feet high.

With the rakes the hay is taken from the swath, when cured, just as left by the mower, or from the cock or wind row, if it is desired to rake it before it is cured sufficiently to stack; and when the Rake is loaded it is driven to the Stacker, the rake teeth entering between the pitcher teeth; the hay is pressed forward against the pitcher-head, the horses then back the Rake off, leaving the hay in a compact mass upon the pitcher and return to the field for another load. As soon as the Rake is out of the way the horse attached to the pitcher rope is started, elevating the load the desired height, when the latch rope is pulled and the hay is dropped in the center of the stack, the horse is backed up, the pitcher being brought back to the ground by its own weight, ready for another load.

The "Eclipse" has special advantages for stacking in windy weather, and for loading hay, etc., on wagons. It dumps the load at any desired height from 5 to 25 feet, while it is easily moved, quickly set, and amply strong.

This principle of making hay, by which the expenditure of manual labor is reduced to a minimum, is now almost too well known to need much description, as these machines are now in the hands of all the largest farmers and have proven entirely successful. The words "making hay" are used advisedly, for this Stacker and Rake do all the work from the time the mower cuts the hay until it is in the stack or on the wagon, and no other machines or implements, nor the expenditure of any manual labor, is either required or even desirable.

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Three men and one team can put up 400 bales per day.  
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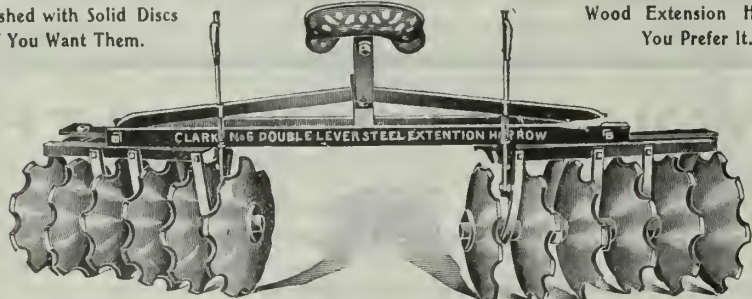
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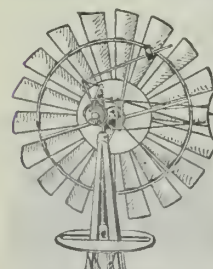
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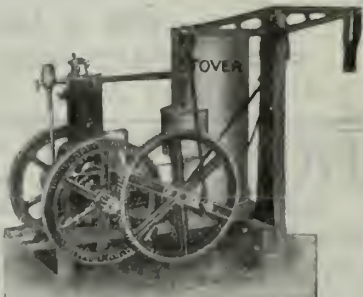
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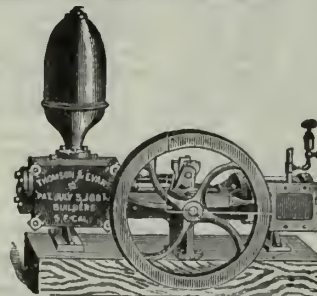
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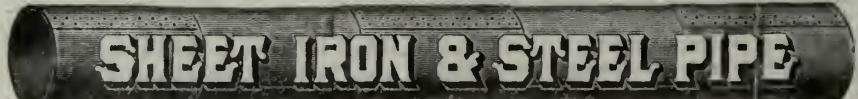
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# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 19.

SAN FRANCISCO, SATURDAY, MAY 10, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

### The Codlin Moth and Its Work.

Although the destructive worm of the apple and pear has been ruinously at work on this coast for more than a quarter of a century, there is still much to be learned about it. Many an apple grower does not yet know the moth by sight, though he may be quite familiar with the larva or worm. One result of this ignorance is the sale of moth traps, worthless for the catching of the codlin moth, because the grower can not distinguish between the moths he catches and the moths he wishes to catch. There is also ignorance even among the experts as to the life history of the insect in the different parts of this coast. It is known in a general way that the appearances and performances of this insect are changed considerably by local climatic conditions, but there is much still to be learned about the exact behavior of the insect in this place and in that. The means of saving the fruit from this pest have been satisfactorily demonstrated, but the best times of applying the means are still short of exact definition, nor can they be determined until the local variations in the habits of the insect are detected. The latest and in some respects the best work yet accomplished on this coast against this insect has just been published by Prof. A. B. Cordley, entomologist of the Oregon Experiment Station at Corvallis, in Bulletin 69 of that station. It consists largely of the results of

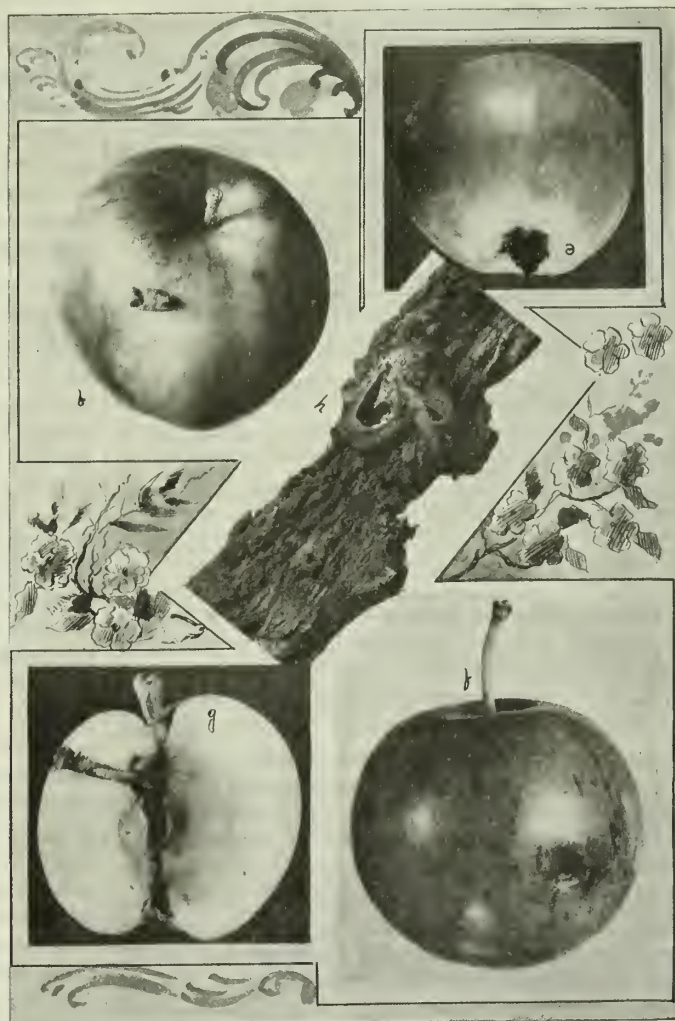
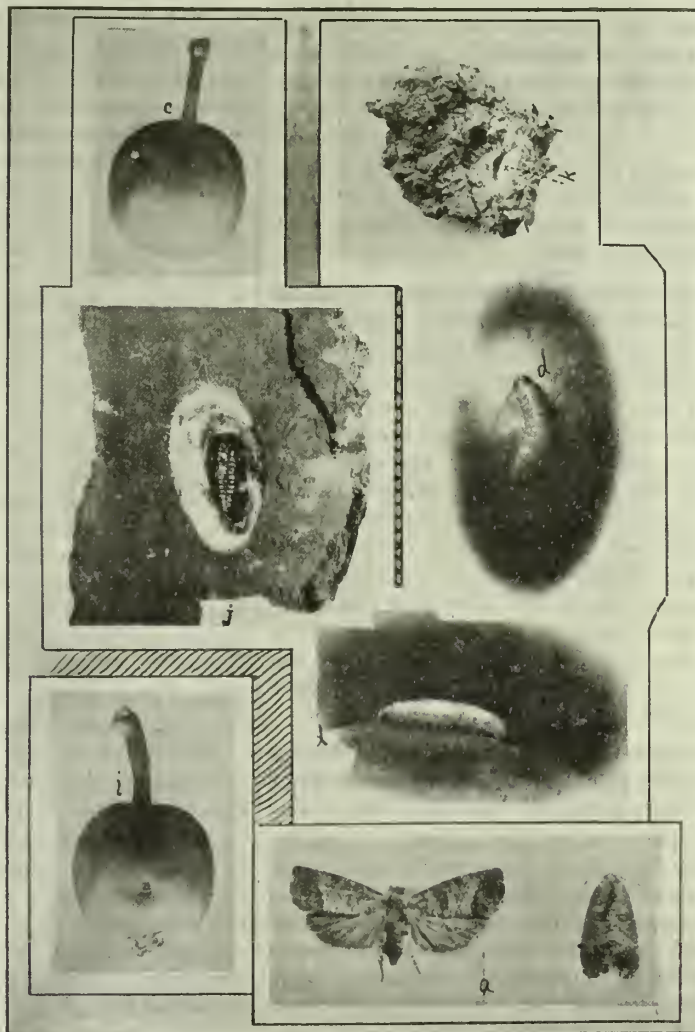
original studies and experiments and is illustrated by original photo-engravings. The details of Prof. Cordley's work are too full for our reproduction, nor is it necessary to undertake this, because we presume he will supply the bulletin to those who write to him for it. We have, however, a duty to our readers to discharge, and that is to call their attention pointedly to the work, as we do upon this page.

The two upper engravings will serve to clear up

the common mind of much of its uncertainty as to the appearance and work of the insect. In the first engraving "a" shows the moth with wings expanded and wings closed, the figures being enlarged  $1\frac{1}{2}$  diameters; "c" shows a white spot on a small apple, of the size and position of the egg laid by the moth; "d" and "d'" are natural size views of the fully grown worm; "i" shows the entrance of the newly hatched worm at the side of a growing apple; "j" shows a cocoon found on the under side of a piece of loose apple bark, the cocoon being torn open to show the pupa in place; "k" shows a clod of soil containing a pupa.

The second plate continues the phases of the insect: "b" shows the moth resting on an apple about one-half natural size; "e" shows the familiar mass of frass at the calyx or eye of the apple; "f" is a mature apple showing a spot where a larva of the second brood had entered the side; "g" shows the path of a worm which entered at the eye; burrowed about the core and escaped when full grown by the upper tunnel to the outside of the apple, and "h" shows a torn open cocoon on the under side of loose bark where the insect had gone for winter quarters. All these matters are discussed in detail by Prof. Cordley in his bulletin. In the form in which we present them, by using his engravings, they will be found very useful in teaching our readers where to look for the insect and what to find.

Another picture shows a good spraying outfit for the codlin moth as used by a leading firm of Oregon apple growers. Of the general conclusions reached by Prof. Cordley with reference to Oregon the following may be cited: Spraying with one of the arsenites is the most practical method of protecting fruit from the codlin moth.



Various Forms of the Codlin Moth and the Character of its Life and Work.



Spraying by Gasoline Power in the Orchard of Olwell Brothers, Central Point, Oregon.



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E. J. WICKSON. Horticultural Editor

San Francisco, May 10, 1902.

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## The Week.

More showers and cool weather delay the approach of summer and are giving California an unusually long spring time this year. This is a lazy man's year to be sure, for everything moves slowly and gives many chances to get the ground into good summer shape. Certainly the thousands of visitors are seeing the State at a great advantage, and it is to be hoped that many of them will conclude to stay, for the probable shortage of help for all summer work becomes more sure as the season advances. Employers are making unusual exertions to get adequate labor supply. Even thus early the orchardists are advertising in the towns in the hope that many may be induced to put in the summer in fruit work rather than idle touring. We hope they will succeed. The change will be as strengthening and the call to help the fruit growers and at the same time accumulate rather than scatter money is one which many can well heed. Our towns have leisure people enough, young and old, to largely relieve the stress which now seems likely to be experienced. At a meeting of fruit growers in Chico on Saturday last it was stated that from 2000 to 3000 outside people will be needed there this year, especially during the four or five weeks that peaches are ripening. Before that the cherries and apricots will require many pickers. After discussing the situation it was decided to advertise for help in various parts of the State, and to begin at once. This will make it necessary for others to help themselves from the available workers in their adjacent towns or Chico will have the early bird's portion without a contest.

There is nothing doing in spot wheat and, though firmly held, there is little movement. Options have been stiff, but are to-day declining in sympathy with Eastern markets. One straight cargo of wheat and one mixed and a lot of flour and wheat by steamer for Australia comprise the outward movement. A ship has been chartered for wheat for South Africa. Barley is higher, especially for feed grades. Oats are improving and moving a little, as is also corn. Beans are higher, there being quite a movement in Large and Small Whites, Bayos and Pinks. Bran is in small receipt, highly held and little wanted. Hay is weak, slow and unchanged, except that cow hay has been marked down a little; but nothing is doing at any price. Beef is unchanged; mutton is a shade easier, especially for lamb; hogs are unchanged in price, though the receipts are larger, some coming from Utah. Butter is firm and in good demand; a large contract for the navy at Mare Island has been let to a Kansas bidder, and at the same time California butter is being sold to go to Kansas. Cheese is

steady and unchanged. Eggs are higher, the demand keeping up well. Poultry is little changed; it cleans up better, but otherwise is not improved. Potatoes are high and scarce, both new and old, and onions are tolerably firm for choice old and not many in sight. New reds are arriving, but not any choice so far. Peas and asparagus are being canned freely. Rhubarb is in good supply. Mexican tomatoes are still selling here and a few string beans bring high prices. Cherries are plentiful, but quality is low and prices irregular. Oranges are quiet; prices unchanged. Lemons are very slow. Limes are the same as last week. Active movement in jobbing dried fruits and the market is firm. Dried apples are particularly scarce and sought for on Eastern account. A sale of Vacaville dried apricots, July delivery, in sacks, is reported at 7c f. o. b., while San Joaquin apricots are said to be offering at 6½c. Dealers are trying to contract hops at 12½c, but the figure does not commend itself to growers. The wool market is dragging because of reports of a strike in the Eastern woolen mills and buyers are trying to crowd values down on that ground. Choice wools are, however, strongly held.

The Interstate Commerce Commission, upon the complaint of California fruit growers, has decided that common carriers must route shipments according to the direction of the shipper, but Mr. Ripley of the Santa Fe says he does not think the roads will comply with the ruling, but will let the courts decide whether they or the fruit shippers are right. He does not think the ruling of the Commission equitable. The railroads are the responsible parties. When they guarantee to take the fruit to its destination and deliver it there, it is not the business of any one how it is done. So, as the Interstate Commerce Commission has no power to enforce its decisions in this matter, the growers have secured a moral victory, which may or may not take effective form through the courts.

It will be timely for our fruit growing readers to study carefully the points on the codlin moth which are given on the first page of this issue. To clearly recognize the fact is a good step toward its regulation. Prof. Cordley, whose work we have outlined, believes that there are only two broods of the codlin moth, but they appear so irregularly that the broods overlap to such an extent that there are worms to be fought all summer. That is the important point for the grower to hold in mind. Prof. Cordley urges that it "is not only practical, but necessary, to spray for the second brood. Persistent, intelligent spraying should give 85% to 90% of fruit free from worms. Our best orchardists do even better. Clean, smooth trees, clean cultivation, sheep or hogs in the orchard, screens over the doors and windows of storerooms, and banding the trees are efficient supplements to spraying." The conclusion of Prof. Cordley's appeal would seem to be: Never mind if there are only two broods; fight just as though there were forty.

The falling to pieces of the prune combine promises to strengthen the local organizations and cause more reliance to be placed upon them. Col. Hersey, president of the Santa Clara County Fruit Exchange, at the last meeting of that body said, alluding to the future of the combine: "For two years we have been in pursuit of ideals. However happily conceived and fruitful of promise, the results in practice have not been satisfactory. We must now begin again at our own door and struggle for the success that seemed within our grasp when we turned from it. I believe our own methods are ideal methods, proved so by practice. Let us stay with them and work earnestly and devotedly in harmony and peace."

Prof. C. W. Woodworth of the University, who is now in southern California making a special study of mites on citrus trees, is credited with saying that he is convinced the red spider now proving such a destructive factor among the orange orchards is a new species of this pest, differing in size and especially in the effect of its bite on fruit. The ordinary red spider has been known for some years to orchardists, but they seem easily gotten rid of and are not very destructive. The new species is tenacious of life, and when it bites an orange the fruit decays quickly and will not stand transportation. Prof. Woodworth will stay with this issue at the south for several weeks and we hope will strike a settlement of it.

## QUERIES AND REPLIES.

### Subirrigation With Tile.

TO THE EDITOR:—I want to try subirrigation on a patch of strawberries, 75x150 feet, which has a total fall of not more than 2 feet, and the soil of which is of such nature that moisture spreads sideways quite readily. What size should the tile be? How far apart should the ducts be laid? How deep? Must the ducts be laid on the same level throughout, or will it do to lay them at a certain distance from the surface, which is an even slope? Any suggestions will be gratefully received.—SAMUEL HILTON, Shasta county.

We have discussed this subject in earlier issues of the PACIFIC RURAL PRESS and in Farmers' Bulletin No. 116 of the United States Department of Agriculture. The presumption is against the practicability and profitability of the method, for, though it has been proposed, and to some extent experimented with, for the last quarter of a century or more in this State, it has never established itself in practice. There is reason to believe, however, that on certain soils distribution through simple lines of tile laid near the surface may be more satisfactory than running water in furrows. This will be for shallow-rooting vegetables and berries, where the pipes are to be re-laid and thrown out at short intervals of time. The entrance of roots in such cases is not a ruling factor. The distribution by connecting these lines of tile with a head ditch or flume is easily effected, and shallow cultivation need not be interfered with. But even in such case the cost of tile enough to cover any considerable area soon reaches high figures, and the labor of laying and relaying it is also expensive. It is doubtful whether the time will ever come when such systems and devices will replace well-regulated surface distribution and the cultivation which is associated with it, though for economy of water, and to escape the refractory condition which some soils assume upon surface irrigation, experimentation in this line certainly commends itself.

Distribution through tile laid upon the surface is available for shallow-rooting plants, and has been shown in Farmers' Bulletin No. 56 to be economical both of labor and water under Eastern conditions. In an arid region, however, the prevention of surface stirring of the soil is a decided objection to the system, unless the soil be very light and free from a tendency to bake. Surface applications not followed by stirring are not a substitute for cultivation. It is a common experience of beginners that plants may dwindle and fail, though water may be almost daily poured around them, on an uncultivated surface. Each new application seems to add to the compact and inhospitable character of the soil.

For these reasons we doubt if our correspondent would find his proposed method satisfactory. Strawberries must have the water near the surface. This would require a line of tile near each row of plants—suppose we say 3 feet apart; then he would require about 4000 feet of 2-inch tile, and as only good, hard-burned tile could be used for such purpose, the cost would be about \$100 for the tile alone for the quarter of an acre which he proposes to subirrigate. To secure anything like even distribution of water, there must be a "head" or pressure, which would force the water out evenly at all apertures, or else the tile must be laid on a level. If laid on a grade, with the lower end of a 150-foot stretch 2 feet below the upper end, most of the water would be forced out at the lower end of the patch, and the upper end would be dry. The subject is interesting. We would like to hear from others about what they have done and what they have failed to do in this line.

### Curl Leaf and Root Knot.

TO THE EDITOR:—Please inform me what is the cause of curl leaf on peaches. What is the effect? What is the remedy?

I find on some trees where the roots start to spread, black knot—some term it cancer. Is this any cause, and will it damage the tree? Is there any remedy?—SUBSCRIBER, Don Palos.

The curl leaf is a fungus growing in the tissues of the leaf: the effect depends upon the violence of the attack and the susceptibility of the variety of peach, the degree in both cases, perhaps, being conditioned upon the local climate. The measure of the effect is proportional to the violence. Sometimes only a few leaves are lost and are replaced by new ones without apparent injury to tree or crop: sometimes all leaves



fall and this usually destroys the crop: sometimes repeated attacks kill the tree. The remedy is the winter strength of the Bordeaux mixture just before blooming, as we describe each year in the PACIFIC RURAL PRESS at the proper time for it.

Root knot may destroy the value of the trees if it starts in while the tree is young and is seen to check its growth. The remedy is to remove the knots with hatchet or chisel and apply Bordeaux mixture. These knots can be thus removed at any time and regular examinations should be made for them at intervals.

Bergetti or Blenheim.

To THE EDITOR:—Can you tell me if the Bergetti apricot is a first-class fruit, or not? If not, what are its defects? I was told it was as good as the Blenheim, so set half of each this spring, but many Bergettis sunburned in March while the Blenheims did not. I have been told since that they are not salable for drying or canning. If this is true please tell me which is best here near Mountain View; to bud them in June to Blenheims, or to graft them next February?—SUBSCRIBER, Mountain View.

Conditions affecting growth and maturing of fruits are so different in the coast and interior valley districts, that some varieties show marked differences in character and value in the two districts, while other varieties may not be seriously affected and be valuable in both districts. In the apricots these facts are clearly shown. There are some large flat varieties of French and Italian derivation which do well in the interior valleys where, with higher day temperature and warm nights, they are of high color, with firm, deep yellow flesh and good sweetness and flavor. In the bay district they grow larger, are lacking in color and seem to keep on growing without getting color or quality until a defective maturity is reached in softness and flatness of flavor. In processing they may fall to pieces, or are lacking in beauty and flavor, even if canned in fair shape. The different growing conditions seem also to affect the trees, for a bay district tree, after making a crop of this inferior fruit, may skip the next year's crop and become an irregular bearer, while the tree in the interior may bear better fruit and fruit more regularly. For this reason it is not wise to carry some of the satisfactory interior varieties into the bay district. We apprehend that this may have been done with the Bergetti, which has been considerably propagated because of its value in the Stockton and Oakdale districts where it was introduced, perhaps from Italy, by Mr. Bergetti. It may be identical with the St. Ambroise, and our experience in growing the St. Ambroise in Berkeley shows the features mentioned above. The Royal is a variety which seems to show good character wherever grown. The Blenheim is certainly the best apricot for the coast region in the central part of the State. It is a more persistent and regular bearer; it can be brought to good size by thinning and treatment of the tree. If we had your trees we should work them over into Blenheims, budding in June and grafting next winter whenever buds failed.

Packing Butter for Home Use.

To THE EDITOR:—Will you kindly inform me through your paper as to the best method of packing butter? I make more butter now than I need and wish to pack the surplus so that it will keep through the summer.—McCoy FITZGERALD, Shasta county.

Discussion of all that is involved in this paper would require a treatise—in fact, everyone who keeps a cow should have an up-to-date dairy handbook, and should shape his practice in accordance with all that dairy science has demonstrated about the cow, her care and feeding and the handling of milk for all purposes. We will take it for granted for present purposes that the cow is in good health, the feed is of good quality and free from excessive rankness and from bad plants which give ill flavors, for no good keeping butter can be made from anything but milk that is in every respect sound. We will suppose also that the cream is not too old, but is clean from all contamination and slightly acid. Stop the churn when the butter appears in small granules, something like wheat grains; draw off the buttermilk with the arrangement therfor which all modern churns employ, pour in a good quantity of pure cold water, turn the churn a few times and then draw off the water, which will bring the balance of the buttermilk with it. Lift out the granular butter carefully

onto a flat surface and let it drain a little. Then sprinkle evenly one ounce of pure dairy salt (not common barrel salt); turn the granules over carefully to distribute the salt. When the butter has drained well and when the granules are cool and firm, press them together firmly with a wooden worker, using always pressure without rubbing or sliding motion. The result will be a mass of butter in solid and still granular form. Pack this firmly into a crock or tub previously soaked with hot brine followed by cold water. Put the butter in small portions, so that it may be pressed down without leaving cavities; cover with clean cloth or paraffine paper, with a layer of salt if for home storage; cover tightly and put away in the coolest well ventilated place on the premises, where it can not be reached by odors of vegetables or other substances which may injure its flavor. If the milk is sound and the butter well made, it will keep for months in good condition if the storage place is suitable.

The Grape Vine Hoplia.

To THE EDITOR:—I enclose you a beetle which has been working on our vineyard for the past three days. We are spraying the vines with a solution made from the stems of the plant from which our buhach powder is made of. We kill every bug we reach. Last year we had a few on some of our two and three-year-old vines. This year we have a thousand where we had one last season. This time the beetles do not confine themselves to the young vines, but have attacked the old vines as well, vines that have been planted for fifteen years. The attack on the old vines, however, is light. Last year we noticed that only black grapes were damaged, while this season both black and white grapes are attacked. If possible we would like to know something regarding the winter habits of the beetle. If winter spraying would do any good, we will do it. Another year, if the bugs are worse, they will take the vineyard.—J. F. PETERS, Atwater.

This plump yellowish brown beetle, about one-third of an inch long and with a bronzed abdomen, belongs to the genus hoplia. We are not aware that the species is determined. We have received tidings of it nearly every year from the San Joaquin for the last twenty years and yet, fortunately, it has not yet taken the country. It belongs to a group whose larvæ live underground, feeding upon the roots of various plants. As only the mature beetle attacks the vine leaves, and as he only has a short aerial life, the injury by the insect has always had a limit. Any spray which will kill them is good, but spraying the foliage with Paris green so that all which eat may be poisoned is setting a trap for them, which is often more effective than reaching the insect itself with a spray which kills by contact. Fortunately they appear early in the season when the fruit would not be made dangerous by a poisonous application to the vine.

Onions and Lima Beans.

To THE EDITOR:—How will onions do on land that is located 20 miles southwest of Fresno, with a surface of 12 to 18 inches of rich, light-colored, ashy soil and adobe underneath? It has plenty of water for irrigation. I should like to know how many sacks of onions are produced on the most favorable land in this State. How would Lima beans do on the above-mentioned land?—SUBSCRIBER, Wheatville, Fresno county.

The growing of onions on the land you mention ought to be very successful, providing the land is free from alkali. You will have to try some experiments in order to get the moisture conditions just right and to find out what is the best time for starting the crop, so as to get the advantage of temperatures best suited for the plant. The yield of onions depends very much on circumstances. The largest California crop on record is thirty-three tons to the acre, but half that amount is a good yield.

Lima beans would probably not succeed. This bean does not thrive well in the heat of the interior valley. The main crop of the State is produced on the coast flats of Ventura and Santa Barbara counties, where the heat is reduced and drouth moderated by ocean breezes. More hardy beans, like the pink beans, are best adapted to the interior valleys.

Bees and Pear Blight.

To THE EDITOR:—I noticed this morning some twigs on my young pear trees which were beginning to die with pear blight. Without a single exception I found that the blight had started with the blossoms, while every branch and one little tree that had no

bloom at all were absolutely immune. There are some bees in the neighborhood. I send you in a separate package some samples of twigs.—E. DAVENPORT, Selma.

This is an interesting observation. The specimens show the blight advancing down the twigs, as the writer describes. It will be important for all to observe and report on the occurrence, or lack of it, on twigs which carried no blossoms.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 5, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The weather continued cool and cloudy during the first part of the week, but higher temperatures prevailed at the close. Light rain fell on Tuesday and Wednesday. Haying will commence during the present week and a heavy crop is expected. Grain continues in excellent condition, and in some sections it is predicted the yield of wheat and barley will be the largest ever harvested. Orchardists are spraying and thinning fruit. French prunes and pears are dropping to some extent in Yolo county, but the crop will probably be heavy. Deciduous fruits are reported superior in quality and of large size, and orchardists expect good markets. Cherries are being shipped in considerable quantities from Vacaville.

COAST AND BAY SECTIONS.

Cool weather continued until near the close of the week and light rain fell in the central and northern portions Tuesday and Wednesday. Frosts occurred in some of the northern districts, but were too light to injure fruits or vegetables. Grain, hay and feed are in good condition. In the northern and central districts there will be heavy crops of grain, but in San Benito and other southern coast counties the yield will probably be below average, owing, it is said, to cold weather and scarcity of the early rains. Good crops of hay are now being harvested. Hops and vegetables are in good condition. There is a probability of a very light yield of prunes in portions of Santa Clara, Sonoma and other counties, and as no injurious frosts have occurred this season orchardists are unable to explain the shortage, though some attribute the blight to late rains. Other deciduous fruits give promise of full crops, with the exception of apricots in a few places.

SAN JOAQUIN VALLEY.

The weather has been generally clear and warm during the day, with cool nights, and light rain has fallen from Fresno northward, greatly benefiting grain and pasture. Wheat and barley are rapidly heading out and good crops are probable in nearly all the central and northern counties, though barley is reported light in Merced county. Haying is progressing in all sections; the first crop of alfalfa is reported heavy, but of inferior quality. Pasturage is plentiful and stock are in good condition. Small fruits have commenced to ripen in the vicinity of Reedley. Apricots and peaches are dropping in some localities, but fair crops are expected. Blight is injuring pears in Tulare county and the yield will be light. Other deciduous fruits are in good condition and vineyards are thrifty.

SOUTHERN CALIFORNIA.

Cool weather has continued during the week and fogs have prevailed along the coast, benefiting growing crops. Drying winds in some sections have been unfavorable for late grain. Hay cutting has commenced and a fair crop is being harvested. Early sown grain is still in good condition in most places, but needing rain, and the same is true of sugar beets, potatoes and other crops. Deciduous fruits are not making rapid progress, owing to continued cool weather, but are reported in fair condition. Strawberries are being shipped from San Diego. Citrus fruits and walnuts are doing well.

EUREKA SUMMARY.—Weather conditions favorable. Farm work is well advanced. Some small grain unhealthy; growing slowly. In a few localities prunes were slightly injured by last frost.

LOS ANGELES SUMMARY.—Grain harvest and haying in progress in some places; early sown, a good crop; late sown, light. Lima bean planting begun. Frost in Campo Mountain valley damaged potatoes, vines, etc.

Rainfall and Temperature.

The following data for the week ending, 5 A. M. Wednesday, May 7, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the Week	Minimum Temperature for the Week
Eureka.....	.98	49.49	45.96	40.23	72	42
Red Bluff.....	.42	30.99	24.23	23.40	76	42
Sacramento.....	.10	16.41	19.51	22.59	74	42
San Francisco.....	.26	18.19	20.51	24.27	70	46
Fresno.....	.02	6.84	11.09	12.62	84	44
Independence.....	T	4.29	5.85	5.39	76	40
San Luis Obispo.....	.00	21.93	30.95	16.97	82	42
Los Angeles.....	.00	10.56	15.59	17.13	80	46
San Diego.....	T	6.11	11.26	7.47	78	52
Yuma.....	.00	.68	3.60	2.86	96	56



## FRUIT MARKETING.

## Shipments of Fruits and Fruit Products in 1901.

General N. P. Chipman, president of the State Board of Trade, has just issued his annual report upon the statistical aspects of the horticultural productions of California. This is the twelfth report which General Chipman has prepared, and he deserves the gratitude of the people for his patriotic service. We shall take from the report such statistical tables and comments as seem to us most interesting:

**METHOD OF THE REPORTS.**—I have pursued in the present report the course marked out from the beginning—which was to give to the fruit, wine and grape brandy and vegetable industries the prominence which their influence in State development seemed to demand.

I have so stated the results that the tables show with certainty the regions of production. Obvious reasons seem to require that the shipments from counties south of the Tehachapi mountains—called southern California—should be given separately from shipments north of Tehachapi—called northern California.

**TERMINALS EXPLAINED.**—The railroad companies keep their books with terminal points only and hence it has been impossible for me to report individual counties. It is necessary to a correct understanding of the localities of production that these terminals should be given and the region embraced by each explained. In southern California the reports are made from Los Angeles, and Orange, Riverside, San Bernardino and San Diego counties, and, while all the shipments are accredited to one or other of these localities, they do not represent accurately the shipments from each, owing to the fact that the two railroad companies doing the business there do not pursue the same method of bookkeeping. It may be said, however, that these places mentioned in the statistical tables embrace all the shipments from southern California. In northern California there are the following terminals: San Francisco (representing shipments of fruit from outlying counties, except the item of canned fruits, which are mainly put up in that city, but the fruit comes from the interior of northern California), Oakland (which represents quite a large fruit district in Alameda county), San Jose (which is the terminal for the Santa Clara valley and other regions thereabouts), Stockton (which represents the San Joaquin valley and has credit for the large raisin shipments of Fresno county and the increased orange production of the counties of the southern San Joaquin valley), Sacramento (which is in the heart of the great Sacramento valley and represents the region south of Marysville and on the west side of the Sacramento river), Marysville (which is the terminal for shipments north of that place as far as Shasta county, and embraces the orange shipments from Oroville, Palermo and around Marysville). The intelligent reader with the map in his hand can fix with much certainty the localities of production of each of the products in the list of fruits (deciduous and citrus), dried and green, wines, brandy, nuts, raisins and canned fruits and vegetables.

**FRUIT TREE PLANTING IN THE STATE.**—At my request, our secretary has taken from the assessment roll the returns made by county assessors of bearing fruits trees and vines, subject to taxation, and non-bearing trees, not so subject. This is a valuable contribution to the report, although it is by no means an accurate statement, as many trees must necessarily escape. There are reported 23,380,439 bearing trees of about twenty classified fruits, and 7,619,095 non-bearing trees, a total of 30,999,534. Assuming 100 trees to the acre, we have 309,995 acres of fruit trees and 210,810 acres of grapevines. I am satisfied that the acreage of fruit trees is much greater than reported:

Kind of Fruit.	Number of Trees in Bearing.	Number of Trees, Non-Bearing.
Apples.....	1,586,241	534,354
Almond.....	1,160,750	278,622
Apricot.....	2,305,277	386,102
Cherry.....	400,325	116,400
Fig.....	149,360	46,338
* Grape (acres).....	187,210	23,610
Lemons.....	805,263	504,622
Lime.....	1,220	105
Nectarine.....	1,147	105
Orange.....	3,137,308	1,843,300
Olive.....	590,543	571,480
Peach.....	4,681,455	1,401,881
Pear.....	1,343,543	333,210
Plum.....	265	330
Pomelo.....	9,600	12,425
French Prune.....	6,219,955	1,132,287
Prunes.....	625,215	246,247
Quince.....	1,425	105
Walnut.....	326,547	185,503
Miscellaneous.....	5,490	2,325
Total.....	23,380,439	7,595,485
Total, all kinds.....		30,985,924

\* Not included in totals.

**FRUIT TREES PROOF OF CLIMATE.**—As indicating climatic conditions and the fruit-growing counties of the State, the table of fruit tree planting is an unmistakable witness. The thermometer tells the truth, but it does not necessarily tell the whole truth.

## GENERAL SUMMARY AND COMPARATIVE TABLES OF SHIPMENTS OUT OF STATE, BY RAIL AND BY SEA, OF FRUITS, WINE, BRANDY AND VEGETABLES FOR TEN CONSECUTIVE YEARS—TONS OF 2000 POUNDS.

KINDS.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.
Green deciduous fruits.....	59,374.5	80,112.3	90,692.2	66,254.8	57,638.3	72,350.2	69,732.2	96,943.6	91,176.5	93,673.7
Citrus fruits.....	34,857.5	80,757.0	58,964.0	115,825.5	99,156.0	98,547.0	180,658.9	131,916.8	226,546.6	323,871.4
Dried fruits.....	29,762.2	45,336.2	51,828.2	61,386.4	48,522.8	75,159.7	76,662.7	86,925.3	90,052.8	106,987.1
Raisins.....	26,673.4	37,409.9	46,954.4	46,390.1	34,434.6	39,065.8	47,796.3	36,008.7	36,047.0	43,314.0
Nuts.....	2,061.9	1,796.5	3,953.5	3,234.7	4,972.6	5,808.6	5,815.8	6,608.4	6,518.4	8,462.4
Canned fruits.....	55,273.7	31,626.3	60,352.6	41,395.5	45,546.9	73,464.7	52,219.7	75,240.0	75,556.9	83,229.1
Carloads fruit, by rail and by sea.....	20,800.3	27,708.8	31,274.4	33,547.2	29,026.7	36,439.6	43,288.6	43,364.3	52,901.5	65,963.8
Carloads vegetables, by rail.....	none rep'ted	6,978.4	4,276.6	3,613.6	1,130.6	4,243.8	3,045.6	2,613.6	4,367.8	8,371.7
Carloads vegetables, by sea.....	none rep'ted	none	410.0	40.0	487.7	490.8	801.4	790.7	772.9	801.1
Carloads wine and brandy by rail and by sea.....	4,832.5	6,620.9	7,663.5	8,056.8	7,609.0	6,897.8	9,014.0	8,713.9	9,067.3	8,606.3
Carloads fruit, vegetable's, wine, brandy, by rail and sea.....	25,632.8	40,928.5	43,624.7	45,257.4	38,254.0	48,072.0	56,149.6	66,797.8	66,797.8	83,731.9

## SHIPMENTS OF FRUIT OUT OF STATE BY RAIL IN 1901, SHOWING TERMINAL POINTS OF SHIPMENT. TONS OF 2000 POUNDS.

PLACE OF SHIPMENT.	Green Deciduous.	Citrus.	Dried.	Raisins.	Nuts.	Canned.	All Kinds.
<b>North, Cal.</b>							
San Francisco.....	277.4	41.8	8,873.1	187.1	569.9	19,273.9	29,223.2
Oakland.....	2,029.2	1.1	1,506.5	24.5	6,332.6	9,893.1	9,893.1
San Jose.....	22,555.3	1.1	41,944.8	8.0	476.6	6,889.3	71,873.9
Stockton.....	9,429.7	13,545.3	18,411.4	34,898.1	110.1	5,318.5	81,713.1
Sacramento.....	53,229.0	662.4	16,576.4	641.3	567.7	6,641.6	78,518.4
Marysville.....	2,307.3	4,225.8	8,708.0	79.7	121.9	3,987.9	19,330.6
Not des'ted.....	573.0	2,317.1	3,635.0	5,679.0	1,150.1	13,354.6	
Total tons.....	90,300.9	20,792.6	99,655.0	41,493.4	1,870.7	49,793.9	303,906.5
Total cars.....	9,080.1	2,079.3	9,965.5	4,149.3	187.1	4,979.4	30,390.7
<b>South, Cal.</b>							
Los Angeles.....	175.3	183,294.3	4,098.8	562.1	5,227.1	4,864.4	198,222.0
Orange Co.....	14.3	17,985.2	205.7	45.4	1,327.8	510.0	20,088.5
Riverside Co.....	13.0	47,984.6	284.5	21.2			48,303.3
San Bern. Co.....	26.9	43,299.5	1,192.7	431.1	10.3	927.8	45,877.3
S. Diego Co.....		10,423.5	67.8	533.1			11,023.4
Total tons.....	229.6	302,987.1	5,849.5	1,596.9	6,555.2	6,302.2	323,530.5
Total cars.....	23.0	30,298.7	585.0	159.7	656.5	630.2	32,353.1
Cars rail.....	9,053.1	32,378.0	10,550.5	4,309.0	843.6	5,606.6	62,743.8
Cars sea.....	314.3	9.2	148.2	22.4	2.6	2,713.3	3,210.0
Sea and rail.....	9,367.4	32,387.2	10,698.7	4,331.4	846.2	8,322.9	65,953.9

## SHIPMENTS OF FRUIT OUT OF STATE BY SEA IN 1901. TONS OF 2000 POUNDS.

	From San Francisco.	Total Carloads.
Green deciduous.....	3,143.2	314.3
Citrus.....	91.7	9.2
Dried.....	1,482.6	148.2
Raisins.....	223.7	22.4
Nuts.....	26.5	2.6
Canned.....	27,133.0	2,713.3
All kinds.....	32,100.7	3,210.0

## SHIPMENTS OF VEGETABLES OUT OF STATE BY RAIL IN 1901—TONS OF 2000 POUNDS.

PLACE OF SHIPMENT.	Green.	Canned.
<b>Northern California.</b>		
San Francisco.....	20,442.8	555.8
Oakland.....	784.1	3,230.2
San Jose.....	982.1	1,432.2
Stockton.....	11,567.3	40.8
Sacramento.....	9,794.8	1,072.5
Marysville.....	339.5	
Other points not designated.....	4,591.8	
Total tons.....	48,502.4	7,231.5
Total carloads, 10 tons each.....	4,850.2	723.1
<b>Southern California.</b>		
Los Angeles.....	26,397.3	231.5
Orange County.....	1,199.7	
Riverside County.....	7.9	
San Bernardino County.....	132.7	
San Diego County.....	15.0	
Total tons.....	27,752.6	231.5
Total carloads, 10 tons each.....	2,775.3	23.1
Total carloads by rail.....	7,625.5	746.2
Total carloads by sea.....	783.2	17.9
Total carloads from State.....	8,408.7	764.1

## SHIPMENTS OF VEGETABLES OUT OF STATE BY SEA IN 1901—TONS OF 2000 POUNDS.

PLACE OF SHIPMENT.	Green.	Canned.
San Francisco.....	7,832.4	179.8
Total tons.....	7,832.4	179.8
Total carloads, 10 tons each.....	783.2	17.9

The Weather Bureau of the Government has kept the record in many parts of the State for many years and it is within the truth to say that the records of this Bureau show no practical or substantial climatic difference between southern California and the northern California valleys and the coast region. The tree planting is the proof of this. I need not go greatly into detail. In Butte county the assessor reported 327,890 orange trees planted. This county is in the Sacramento valley, 500 or 600 miles north of Los Angeles. In Tulare county the assessor reported 501,551 orange trees growing, and this county is in the San Joaquin valley. Fresno county, in the same valley, reported 38,300. In the foothills of Placer, in the north, are 31,975, and in Sacramento county, 41,000; in Yuba county, 71,960. Other northern counties have plantings, but this is sufficient to show how widely extended are the possibilities of this culture in California. The northern counties ripen the fruit

## SHIPMENTS OF WINE AND BRANDY OUT OF STATE BY RAIL IN 1901.—TONS OF 2000 POUNDS.

PLACE OF SHIPMENT.	Wine.	Brandy.	Wine and Brandy not Seg'gated
<b>Northern California.</b>			
San Francisco.....	25,616.9	1,746.3	3,308.4
Oakland.....	636.0	15.8	
San Jose.....	1,184.3	143.0	
Stockton.....	6,838.6	1,237.1	
Sacramento.....	11,221.4	379.9	
Marysville.....	1,623.0	95.3	
Other points not designated.....			739.7
Total tons.....	47,420.2	3,617.4	3,948.1
Total carloads, ten tons.....	4,742.0	361.7	394.8
<b>Southern California.</b>			
Los Angeles.....	1,150.4	17.1	
Orange County.....			3.4
Riverside County.....			
San Bernardino County.....			132.9
San Diego County.....			1.7
Total tons.....	1,150.4	17.1	125.0
Total carloads, ten tons.....	115.0	1.7	12.8
Total carloads by rail.....	4,857.0	363.4	407.6
Total carloads by sea.....	2,944.7	32.6	
Total carloads from State.....	7,801.7	396.0	407.6

## SHIPMENTS OF WINE AND BRANDY OUT OF STATE BY SEA.—TONS OF 2000 POUNDS.

Place of shipment.	Wine.	Brandy.
San Francisco.....	29,447.0	336.4
Total carloads, ten tons each.....	2,944.7	32.6

## TABLE OF GAINS AND LOSSES, 1900 AND 1901 COMPARED—CARLOADS OF TEN TONS EACH.

KINDS.	1900.	1901.	Gain.	Loss
Green deciduous.....	9,117.7	9,367.4	249.7	
Citrus fruits.....	22,654.6	32,387.2	9,732.6	
Dried fruits.....	9,096.4	10,698.7	1,603.3	
Raisins.....	3,604.6	4,331.4	726.8	
Nuts.....	651.9	846.2	194.3	
Canned fruits.....	7,555.6	8,322.0	767.3	
Vegetables.....	5,140.7	9,172.8	4,032.1	
Wines and brandy.....	9,067.3	8,605.3		462.0
Totals.....	66,797.8	83,731.9	17,396.1	462.0
Net gain.....			16,934.1	

earlier, and much of it for this reason is consumed in the home market; and yet the north in 1901 sent out of the State 2089 carloads of oranges, of quality equal to any produced in the State. I quote from Bulletin No. 23, Miscellaneous Service, Department of Agriculture, as follows:

"Much of the land of the State is especially adapted to the cultivation of citrus fruits, and while by far the greater portion of the commercial crop of the State is at present grown in southern California, fruit of this character can be safely and profitably grown along the foothills of the Sierra Nevada mountains, from San Diego to Tehama county, a distance of over 700 miles. This area is known as the thermal belt, and varies in width from 3 to 30 miles. Strange to say, the mean summer temperature in this belt is higher in the northern part than in the southern, but in the winter the temperature is higher in the southern than in the northern section. The mean temperature, however, does not vary more than 4° throughout the whole belt."

There has been a citrus fair recently held at Cloverdale, Sonoma county, which attested the entire practicability of growing oranges for profit in that part of the State. In Sonoma county alone there are now 1200 acres of oranges, and the orchard area is increasing.

I will mention but one other tree as indicating climate, namely, the olive. In twenty counties, from Shasta to Kern, there are reported 583,041 olive trees growing, and this is more than half reported for the State. Several northern counties reported olive trees not included in the above total. In Butte county there are 103,000 reported, and in Tehama county 97,962.

**SOME DEDUCTIONS FROM THE STATISTICAL TABLES.**—A clear understanding of what the tables of statistics show will be reached by making some deductions from them. The frost scare of 1901 will still be remembered; and some localities in the State suffered severely. But the topography of our country is so varied, and the conditions existing even in contiguous neighborhoods are so different, that when we come to sum up the year's production the loss be



comes only personal to individuals, while the State, as a whole, seems not to have felt the blight. For example, adjoining the town of Chico on the north there was but little fruit on the large orchard of the General Bidwell ranch, while south of and near the town an unusually large crop of peaches and prunes was gathered. This is one of the many remarkable characteristics of California. The frost alarm was not unlike the alarm felt in southern California because of the light rainfall. When the water failed to descend from the clouds the people began to bore into the earth, and the result was a greater water supply than ever before, and over a greater area. Nature seems to have so adjusted her compensations here that nothing can impede our progress. Let the figures illustrate. We made a gain in 1901 over 1900 as follows, omitting fractions: Green deciduous fruits, 249 carloads of ten tons each; citrus fruits, a gain of 9732 carloads; dried fruits, 1693 carloads; raisins, 726 carloads; nuts, 194 carloads; canned fruits, 767 carloads; vegetables, 4032 carloads. Wine and brandy alone fell off 462 carloads. In 1900 we shipped out of the State of all of these products 66,067 carloads. In 1901 we shipped 83,731 carloads, a net gain of 16,934 carloads. It is a significant fact that we gained in this one year more than the entire output of the State in 1890, when I made my first report. To be exact, in 1890 we shipped 16,195 carloads, showing that we gained in 1901 over the preceding year 739 carloads more than the entire output of 1890.

It may interest the reader to know what the United States Weather Bureau has observed in some illustrative points, also the sunshine and rainfall of California. The following table is compiled from the Annual Summary, California Section, for 1901:

STATIONS.	Rainy Days.	Clear Days	SKY		TEMP.		Rainfall— Inches—
			Partly Cloudy Days	Cloudy Days	Highest— Degrees.	Lowest— Degrees.	
<i>Northern California.</i>							
Red Bluff.....	66	233	64	68	111	25	25.51
Oroville.....	61	170	22	173	115	24	29.58
Marysville.....	46	234	0	127	107	30	22.13
Sacramento.....	53	209	81	75	105	26	18.52
Stockton.....	48	213	108	14	102	22	14.74
Fresno.....	43	227	77	61	110	27	8.07
San Francisco.....	58	174	109	82	91	37	19.75
<i>Southern California.</i>							
Los Angeles.....	32	136	206	33	97	31	11.06
San Diego.....	33	262	58	45	96	35	9.49
San Bernardino.....	48	198	123	44	110	18	12.08
Colton.....	22	204	13	58	109	27	10.21
Redlands.....	31	231	78	53	107	26	9.17

**REMARKABLE AND STEADY GROWTH.**—If you will turn to the table of comparative shipments for these twelve years, you will discover a steady and unbroken growth from year to year in almost every individual product, the gain on the combined products of the orchard, vineyard and garden being 67,536 carloads, or a gain of 516% in eleven years.

Unlike the fruit regions of the Eastern and Southern States, with which we compete in some lines—though in others we have no competitors—we have never suffered an entire loss of any one product; indeed, hardly any loss is noticeable. This fact has great significance, for it proclaims the persistence, certainty and continuity of our products. It fulfills the prophesy of Horace Greeley, who with marvelous prevision declared in 1859 "that California is destined to become the orchard of America." If it were not for California the people of this country would have to look to other lands for their oranges and lemons, their raisins, and almonds, and walnuts, and olives, and high-grade wines and brandies, and, indeed, I might add, some of our other fruit products. It was reported early in the season that southern California had lost her valuable citrus crop. Behold, she comes forward with 30,298 carloads, showing a gain of 8480 carloads over the shipments for 1900.

## THE APIARY.

### General Views of California Bee Keeping.

Mr. E. R. Root of Ohio, who has looked quite widely into California bee keeping, gives comments in *Gleanings in Bee Culture* which will be interesting to our own people and we transcribe them:

The conditions as well as the methods which prevail in California are somewhat different from those in other portions of the United States. The great bulk of the honey produced is extracted, and one of the reasons for this is, doubtless, owing to the fact that a very large part of the product must necessarily be shipped out of the State. Another reason is, that the honey from sage is not inclined to candy, and because it keeps liquid so long it can be sold anywhere.

As a general thing, the hives I saw in California were home-made and poorly made at that. Some of them had seen ten or twenty years of use, and were somewhat the worse for wear. But in that climate almost "anything goes" so long as it will hold together and protect the bees from the hot rays of the sun, and from the rains that last for a comparatively short time.

If there is any place in the United States where bee keeping is conducted on an extensive scale it is

southern California. As a general thing, non-reversible or two-frame extractors would be considered mere toys. The extensive bee keepers on the coast will have nothing smaller than a four-frame reversible machine. This they want mounted on a slight elevation on the side of a hill. The honey runs from the extractor into a spout that connects with a ten or twenty ton galvanized-iron tank. Talk about letting the honey run into a tin pail and then lifting the pail and dumping it into a can—why, those fellows would laugh at you. They want things handy, and they have them so—all but the hives. Of all the miserable contraptions that some of those big bee keepers will put up with! I never saw the like. Brood-frames—some of them look as if they had been made with a hatchet—and, as I have been told, were actually chopped out with this rude tool. Burrcombs? Yes, they have them galore, because the bee spaces vary all the way from the regulation  $\frac{1}{8}$  up to 2 inches. Then when the hives were opened, such a mess of broken honey and an uproar, especially if it was toward the close of the season, and the bees were beginning to nose around to see what they could find! But of this I shall have something to say more specifically later on.

**FIGURES.**—To give one something of an idea of the amount of honey produced in California in a good year, perhaps a few figures may be interesting. Up to 1901 the seasons had been very discouraging for several years. Then there was a fairly good flow. When the season is favorable, San Diego county will average somewhere about eighty carloads of honey; Los Angeles county somewhere about sixty; Riverside, seventy-five. Taking the counties of Orange, Los Angeles, Riverside, and San Diego together, the enormous aggregate of 500 carloads could possibly be produced in a good season; and it is estimated that this amount was actually harvested in 1896. Some of the old resident bee keepers of California say these figures are too large, even for a good year. On the other hand, there are apiaries yielding little lots of honey, produced all through the mountain canyons, that never gets out into the general markets and therefore is not counted.

Some time in the early 60's, I am told, Mr. Harbison, who at one time was thought to be the most extensive bee keeper in the world, and who possibly has made a record that will never be equaled, owned and operated as many as 6000 colonies; and his average for the entire number, I understand, was something like sixty pounds per colony, extracted honey. It is reported that a man by the name of Easley, who had come from the East, starting with 500 colonies, increased them to 1200 in one season, and took 180 tons of honey. This was near Santa Monica.

**THE DISCOURAGING FEATURES.**—But lest some of my readers may get the impression that there is nothing but gold and honey in California, I think I had better tell something of the other side. Experience has shown, I believe, that there are only one or two good years out of five. In the two or three off years, many thousands of colonies starve to death; and it is only the regular stayers who manage to hold over, waiting for the good year that is bound to come if they can hold out long enough. In Los Angeles county alone there were, in 1897, something like 40,000 colonies. At the beginning of 1901, after a period of four bad seasons, it was estimated there were only about 12,000—the remainder, something like 28,000, having probably died off from the continued drouth and the consequent lack of forage.

Several bee keepers who had come from the East to California told me that, although they produced enormous crops of honey some seasons, they believed that their general average per colony was no larger in California than in the East, and this, coupled with the almost prohibitive freight rates to the markets, makes California bee keeping no bonanza.

These off years are due entirely to lack of rainfall. Some parts of California require more inches of rain than others. Several bee keepers told me that, if they could get 10 inches for the southern counties, they would get at least a light crop, and in some portions a good crop would be secured. In other portions, from 14 to 20 inches seem to be required, a good deal depending on the soil and the lay of the land. Down deep in the canyons, where many an apiary is located, and the sun strikes not more than five or six hours during the day, a small number of inches of water would probably do; whereas in the open valleys more might be required.

**HILLSIDE APIARIES.**—The extracting house and the storage tanks on the sidehill are representative of dozens that I saw in California. The house is just large enough to accommodate an extractor, uncapping box, and the necessary tools for working. The hives are located above on the sidehill. The extracting combs are set in a barrow or cart, and the load is run downhill until it reaches the extracting house shown in the lower left hand-corner. The whole arrangement of these California apiaries is such as to provide for honey going downhill all the way, so that about all a man has to do when he loads up his cart or barrow is to let the thing go itself down grade. When the honey is extracted it runs from the machine downhill again into the tanks. These are usually set up on the ground about 15 or 20 inches, or just high enough to let the honey run from the honey gate into the square 60-pound can—the favorite package for

extracted honey on the Pacific coast. These are filled one at a time, and put into a wagon that is backed right up to the tanks. It is then delivered to the nearest railroad station, or sometimes hauled all the way to market, as at times freight rates in California are almost prohibitive.

## THE POULTRY YARD.

### Seasonable Suggestions.

**TO THE EDITOR:**—By this time the greater number of chickens that are to be raised this season are in the race, some well along, some yet in the nursery. While there are several details to be looked after in their care, with wise management the little ones will do very well and make good growth, if they pass the first four or six weeks of their lives in good shape.

There is no danger of feeding chickens too little during the early weeks of their existence. We are all inclined to feed them too much. But after they are ten weeks old many keep feed before them all the time. The writer never had chickens do better than they have this season. Shall he give his method? No feed for the first forty-eight hours. Then finely ground grit or glass, with powdered charcoal—or finely granulated. The first meal is of dry bread crumbs, soaked in milk and squeezed very dry. Four times a day, a very little at a time, they get this food during two or three days. Then for a week or two rolled oats, dry, are given, three times a day. For a change—for fowls of all ages are fond of variety—boiled rice, as dry as may be, rolled in fine shorts and middlings till it is very stiff.

Rice has proved an excellent grain to feed to chickens, either cooked or uncooked. You can purchase the inferior grades at a low price. When it is boiled it goes a long way.

When large enough to well digest ground grain the chicks get finely cracked wheat in the morning, shorts and middlings, mixed up with sweet milk or hot water, and made very dry and crumbly, at noon. In this is put a dash of meat, or blood, meal and some powdered charcoal. Scalded milk is given for drink twice a week. At night the food is finely cracked corn. After they are ten weeks old this latter food, mixed with ground scraps, is kept before them all the time.

On this diet the chicks make rapid growth. Of course one has to look sharply after the mites and lice, which will breed in spite of all precautions. Then a good supply of grit and charcoal must be kept in the coops all the time. Are we not a little careless about giving fowls, of all ages, grit? It is absolutely necessary that a liberal amount be within reach continuously.

But because one man succeeds with a certain method of feeding it is not always profitable for every one to follow suit. If you are having success with a tried and proved method of feeding, either for young or older fowls, continue to use it rather than change on the advice of every one who counsels a different method. Yet one can get hints from most every poultryman.

It has been proved that fowls are fond of variety in their diet and it is for the poultryman's profit that the appetite of Miss Biddie be catered to. The exclusive diet of wheat that many feed to their fowls will not give the best results. Neither is it the cheapest.

**SUPERANNATED HENS.**—How long shall we keep our hens, is a question that very many have not yet solved satisfactorily. If one has large flocks and young chicks are crowding along, the two-year-olds must be forwarded to market. But the usefulness of the hen, at least of many, does not end with the second year. Possibly this applies more particularly to the Mediterranean breeds. Experiments conducted at agricultural stations have demonstrated that pullets far outlay older hens, but on the farm and in poultry yards it is often proved that the two or the three-year-old hen gives an excellent account of herself.

Undoubtedly there are drones in every flock—unless they are weeded out by the use of trap nests. Not every person can provide himself with these nests because of the time and care needed in their use. But the experienced eye can quite readily pick out the thrifty constant layer. But there is nothing like a good trap nest to select the best hens if one aims at building up an extra flock of layers.

Of course this is part of a system that is necessary to get together the best paying flock. System must be adopted in all details of poultry raising if the best results are obtained. It takes years to build up a flock that will exactly satisfy the poultryman. But if a settled system is pursued, ever kept in mind, good results will surely follow. A hit-a-miss method of breeding, feeding and caring for fowls in general will surely result in a lessened income.

**SELLING EGGS.**—How to market our eggs in the most profitable manner is a question that every one has not solved to his satisfaction. Owners of large poultry farms place their eggs with commission houses to a great extent, and not a few smaller pro-



ducers do the same. Satisfaction is not always realized. If one finds a reliable party who will take his eggs, makes frequent and correct returns and sends back the empties within a reasonable time, that is as well as one can expect. But many a shipper has to try this and that commission merchant, or retail grocer, before full satisfaction is attained.

Is it not possible to build up a local trade for eggs in the respective localities in which poultrymen live? If large, white eggs are selected and put up in attractive packages and delivered two or three times a week they should command several cents above the ruling market rates. Not a few families would gladly pay the extra price if eggs, not more than one or two days old, could be obtained direct from the ranch or poultry plant. Suitable packages, holding one or two dozen eggs, can readily be obtained.

Is there any other business than poultry raising in which there are so many details that call for constant observation? From start to finish this and that matter must be sharply looked after or success will not crown our efforts. Yet how many persons there are who take it for granted that any novice can engage in the business and make money by the pocketful. Those who thus think and try their hand are those who fall by the wayside. But it is worth while to observe every detail, to overcome all obstacles and to master the business. For there is more money to be made here, considering the capital invested, than in any other out-of-door occupation. But genuine love for the gentle fowls is one of the requisites, and a dogged perseverance. There is no royal road to success in poultry farming.

Napa, Cal., April 29. A. WARREN ROBINSON.

#### Managing Brood Hens.

Mrs. M. C. Downing explains in the Los Angeles Herald how she manages her brooding hens:

Many poor hatches can be accounted for by confining the hen on the nest with a cage or frame. I can not believe it is right to thus pen her in, as there are times when the chickens are growing in the shells that they get too hot to be comfortable for poor Biddie's body, and she knows best when to get off and cool them when left to her own inclinations.

My sitting hens have a shed, and a wire-run all their own, grit, shelled corn, fresh water and a dusting place are kept in the pen all the time and Madam Biddie can get off and rest, eat and dust herself whenever she feels so inclined. I have often noticed that they will come off three or four times in one day and then again will remain on the nest two or three days.

I go to the pen every morning and evening and change any that have got on the wrong nest; but, as there are just as many nests of eggs as there are hens, there will be none left to get cold, and I never have had a hen leave her nest or break her eggs since I have had this pen. In fact, I have had such good hatches that I had almost lost my desire to own an incubator; but now that our good editor has supplied the incubator, my experience with that will begin very soon, but I still set my hens in their own little pen, and they shall brood all the baby chicks.

#### Poultry Farming as a Side Issue.

By A. E. McCLANAHAN at the University Farmers' Institute at Traver.

What I have to say to those beginning with the incubator and brooder will be conclusions drawn from personal experience in raising chickens by this method. As the success of any one's efforts in any line often depends upon the way they begin, it is very essential that a poultry keeper should start right, and continue to give close attention to many small details, which I haven't time in this article to mention.

**THE BEGINNING.**—About the latter part of September is a good time to begin; then, two hatches will be old enough for fryers and broilers when that class of poultry brings the highest price; and if you are raising a laying strain, your pullets will begin to lay the following spring.

A good incubator that will hold about 220 eggs, which will cost about \$35, laid down, and a four section brooder, pipe system preferred, which will cost about \$20 laid down, should be procured.

Locate your brooder in a suitable building, not in your storehouse, carpenter shop or blacksmith shop, where you might have a fire. Having had a large newly purchased incubator destroyed by fire, I cannot resist calling attention to the above danger.

Let your chicks remain in the incubator until the hatch is well over, then, having your brooder previously warmed to a temperature of about 100°, place them in it, and when they are about 24 hours old, give them a little warm water supplied on the fountain plan. A tea cup filled and inverted in a saucer makes an excellent drinking fountain which may be easily cleaned. Give them no sloppy food, but supply them with fine grit, ground charcoal, millet seed and a mixture of wheat and oats chopped. With the exception of water and grit, which should always be within reach of the chicks, they should be fed only a moderate amount. A bread

made from corn meal, 3 parts to one part of wheat bran and well baked, without grease, makes an excellent food for chicks.

When the chicks are one week old begin feeding them a little fresh meat each day and some rice cooked with a small amount of ginger and some ground egg shells added after being cooked; this should be fed about twice a week until chicks are six weeks old. They should be supplied with green feed at all times, alfalfa or Bermuda grass; both are excellent feed.

After the chickens are two weeks old, give them a mixture of wheat and oats, cracked, after adding a small quantity of wheat bran, as the wheat does not supply quite enough of that part of the food.

**BALANCE SHEET.**—At present I am feeding a flock of 300 hens a daily ration as follows:

	Cents.
22½ pounds whole wheat at 1c per pound.....	22½
15 pounds wheat bran at 1c.....	15
Caseln from 150 pounds milk.....	15½
2½ pounds oyster shells at 1c.....	2
5 pounds ground barley at 1c.....	5
Or a total cost per day of.....	60
Which amounts to \$18 per month.	

All this feed is higher at this season of the year, and if the farmers would co-operate and purchase their feed in the fall in large quantities, they could save from 10% to 25%.

The data of eggs from this flock has been kept since February 1st only, and shows as follows:

FEBRUARY, 1902.	
Sold at store, 136½ doz.....	\$22 70
Used on table, 15 doz.....	2 40
Sold and used for hatching.....	27 00

Total for February.....\$52 10

MARCH, 1902.	
Sold at store, 341½ doz.....	\$44 70
Used on table, 15 doz.....	2 00
Sold and used for hatching.....	8 00

Total for March.....\$54 70

Deducting for feed we have a net income of \$34.10 for the month of February and \$36.70 for the month of March.

About one-half of this flock are White Leghorn pullets and the other half are mixed, about fifty being old Brown Leghorns three years past, and the others as old with no blood from laying stock.

**POULTRY AND THE DAIRY.**—Let us indulge in a few figures. Our creamery man, H. R. Peacock, has about 75 patrons. Suppose each one of these should go into the chicken business, in connection with his present business, and keep a flock of 432 hens, as almost every one of them could. An average of 160 eggs per year from each hen is an average far below what many poultry keepers report in this part of the State. But this number would give us a total of 5,760 dozen eggs each year; and at the net average price for the past two years, (17c per dozen) would amount to \$979.20. Deducting \$311.04 for feed, we have a net income of \$668.16 for each flock, or a total of \$50,112 for the 75 patrons. It would be gratifying to see many more large flocks of chickens in our vicinity, and the grades of stock worked up to a high standard of choice strains.

## HORTICULTURE.

### Jordan Almonds in California.

Consul B. H. Ridgely, at Malaga, writes to the State Department as follows:

It has always been held that the famous Jordan almonds of commerce could be produced only in this Province (Malaga) and, to a certain extent, in the adjacent Provinces of Granada and Almeria. Efforts to grow them in other parts of Spain, as well as in France and Italy, are believed to have invariably failed. Recently, I received a letter from the president of the California Nursery Co. of Niles, Alameda county, Cal., reading, in part:

We send you to-day per mail, in separate packages, samples of almonds. The trees from which these nuts were grown were received from France for the Jordan almond. They were a mixed lot of trees, and only one tree produced such nuts as are mailed you. Will you please advise us if they are Jordan almonds? Samples which we received from New York as the Jordan almond that were imported from Spain were oblong and had no curve, like those we send you.

I showed the samples to three different local experts, and in each instance they were unhesitatingly declared to be *Almondra larga*, or, in other words, the famous Jordan almonds of commerce, of a fair medium grade. The taste seemed quite the same and there was very little difference in the shape.

The surprising feature of this incident lies in the fact that the almonds in question are said to have been grown on a tree imported from France. Is it possible, then, that a tree which would not produce typical Jordan almonds in France would produce them in California?

About 85,000 boxes of these famous almonds are annually exported from Malaga, which is their only market of origin. The report from California and the result of my investigation would seem to indicate,

however, that Jordan almonds can now be grown in California. If this be true, the California growers will probably find the matter well worth their attention, as both the demand and the prices for Jordan almonds have steadily increased during recent years. The present price of these almonds, for the popular grade known as "confectioners," is \$8.75 per box of twenty-five pounds f. o. b. Malaga. The price at the same period last year was \$7 per box.

London and New York have generally taken virtually the whole crop of Jordans. At present the local stock of bona fide Jordans is practically exhausted, and, although all the present signs promise a good crop this year, it is much too early to speak with any certainty as to the prospect. Of the crop of 1901 31,200 boxes were exported direct from Malaga to the United States.

## THE GARDEN.

### Cloth-Covered Hot Beds and Frames.

It is too late to immediately profit by the experience of Mr. J. Luther Bowers in the growing of plants for early setting out; but his methods, as he describes them in the San Jose Mercury, are good enough to remember until the occasion returns for the use of them. It has been his custom to grow plants of early tomatoes, cucumbers, egg plants and melons in hot beds 16 feet long by 6 feet wide, made of inch boards 12 inches wide and 16 feet long for sides, and the end pieces cut to the desired length. We use two boards in front and three for back. One piece, cut 6 feet long and ripped diagonally, will make two pieces that run from a point to 12 inches at the other end. This will make the third board at each end. Now nail the ends to a corner post at each end, one 2 feet long and the other 3 feet long. Now, to these two end pieces nail the front and back, also put on two cleats 4 to 6 inches wide on both front and back on inside, 5 feet 3 inches apart. To these put in two crossbars even with the top of body of the bed, to hold the bed together. If a smaller bed is wanted, use shorter lumber; a 3-foot square makes a very nice bed. For a cover we use the cotton lining of sugar sacks. Twelve of these sewed together will make a cover just right for a 6x16 bed, and one makes a nice cover for the small bed, and, if taken care of, will last three years. This style of cover is far ahead of glass in many ways; it keeps out frost, lets in air, and the sun will not burn the plants.

Now our frame and cover are ready, except fastening the cover. We tack one side of the cover to the top of the back and then tack the lower edge of cover to a 1x4-inch by 16-foot long piece. You now have a cover that can be rolled up or down. When down, this roller will hang over the lower edge and hold the cover down. We sew in about three loops on each end, and have three small nails driven in each end to hook them over.

**FILLING THE BEDS.**—We fill our bed frame with well heated horse manure as evenly and as lightly as possible. On the top of this we place not less than 6 inches of very fine, mellow earth, or well rotted manure and fine sand, half and half. Now at one end of this bed we sew in rows our seed, except water-melons, which should be planted in little holes made with the finger or stick, for, in transplanting, they should be taken up in a lump of earth. When your plants are well up, before they begin to make the second leaves, transplant them into tin cans. Old cast-off two and three-pound cans are just the thing. Melt off the top and punch a hole in the bottom for drainage. Use the earth in the other end of bed. This will be nice and warm, leaving about 2 inches on the manure, and on this set the cans very closely. Tomatoes can be transplanted any time and at any stage of growth. Even if a foot high, they will bear transplanting in cans if put back in a warm bed. The beauty of this way of working plants is that they can be taken care of better if a cold snap comes up. Then the land can be worked over better without the plants on it, and the plants are doing better in the beds than out of doors.

When ready to set out, saturate the earth in the can with water, haul your cans of plants to land; place each can near where your plant is to stand, dig your hole, place your fingers over top of can and around the plants, invert the can and the ball of earth will slip out and you can set your plant without trouble. There is no need of losing one plant if the job is done right.

**GOOD VARIETIES.**—For the home garden the following varieties are the best tomatoes: Livingston Perfection, Trophy, Matchless and Turner's Hybrid. These four tomatoes embrace all the good qualities required of the tomato. For cucumbers use Long Green, Early Cluster, Bliss' Everbearing and Japanese Climbing; for egg plant, New York Improved; watermelon, Florida Favorite, New National and Mammoth Sugar; muskmelon, Nutmeg, Hackensack, Champion and Casaba (pronounced Ca-saw-ba). Without doubt, this last named is the finest and most delicious melon of the present day. When you get the taste of all the melons in your mouth you ever tasted, then you have a taste of the fine flavor of this melon.



## Agricultural Review.

### BUTTE.

**CHERRY CROP VERY LARGE.**—Chico Enterprise: Some time ago the Enterprise stated, on what was deemed to be good authority, that the Rancho Chico cherry crop was to be canned at the local cannery, and that this work would commence about May 15; but we learn that such is not the case, as the Cannery Association has decided that to can the crop would not be profitable. They further claim that the only way in which they can handle the crop at a profit will be to ship the green fruit to other canneries in various parts of the State which may need some of this fruit to fill assorted orders for canned fruit.

**ALMONDS AND APRICOTS LOOKING WELL.**—Oroville Register: The apricots which were thought to be short, and the almonds which at one time were looking light, are showing up extremely well.

**CROWS DESTROYING ALMONDS.**—Oroville Mercury: The almond orchardists near Chico are herding their crows to keep the crows from getting them. The crows are knowing fellows; an unarmed man can hardly shoot them away, and it is very hard for a man behind a gun to do them serious damage.

### KINGS.

**A NOVEL HARVESTING MACHINE.**—Hanford Journal: A machine which attracts a great deal of attention has just been set up at the Hanford Agricultural Works. It is a corn harvester, which was ordered for J. H. Dawson of Excelsior district, who has 240 acres of corn to harvest. This is the first machine of this kind ever in this part of the country, although some of the big ranchers have them. Miller & Lux have ten of them and the Kern County Land Co. has six, so we are informed. The machine cuts down the cornstalks at any height desired, and binds them up in bundles, the same as other machines do grain. It is said that the machine will cut from ten to twelve acres of cornstalks a day, with no more cost than it would be to pay the board of men doing the work by hand.

**WILL PLANT ORANGE TREES.**—Kern Standard: The executive committee of the Board of Trade held a meeting recently at which it was definitely determined to engage in citrus fruit growing on a large scale. A stock company will be organized at once and capitalized at \$15,000. With this amount forty acres of the high lands north of Kern will be bought, prepared and set out to oranges and lemons. A well will be sunk and a pumping plant installed to supply the necessary water for irrigation.

### LOS ANGELES.

**MONSTERA DELICIOSA.**—Fruit World, April 26: A fine specimen of the wonderful tropical fruit known as Monstera Deliciosa has been placed on exhibition in the Los Angeles Chamber of Commerce by its grower, J. H. Rapp, of Hollywood. This delicious edible, raised principally in Mexico, grows on a plant similar to an artichoke, is shaped like a cucumber, but is longer, and protrudes from a spreading hood, somewhat like the tongue of a calla lily. The peculiar product, which is considered a rare delicacy in its native haunts, is grown to perfection in the foothill region surrounding Los Angeles.

**WALNUT ROOT KNOT IN SOUTHERN CALIFORNIA.**—Times: One of the latest developments in the horticultural field is the prevalence of root knot among the young walnut trees in a nursery south of Los Angeles. One man has 5000 trees affected—splendid looking plants, but the roots covered with galls, some of which are as round and large as marbles. I have not seen such a condition before, though the disease known as root galls is well known wherever walnut trees are raised. The trouble has no relation to the bacteriosis that is ravaging the nursery trees of this nut in Orange and Los Angeles counties. The maladies of the young walnut trees are causing great disappointment to those who had prepared to plant heavily to walnuts this season. Several planters have lost heavily by planting diseased trees and have had to pull them out and wait another season for healthy plants.

### NAPA.

**LIGHT FRUIT CROP.**—Register: "It looks to me as though the fruit crop, especially prunes and white cherries, would be rather light this season," said Mr. A. D. Newton, whose snug orchard property is situated 2 miles west of town. Capt. F. W. Bush owns a 53-acre orchard northeast of town. About half his trees grow prunes. From them this year he expects to gather not more than three-fourths of the usual crop.

### RIVERSIDE.

**BEES TOOK POSSESSION.**—Press: A swarm of recalcitrant bees took possession of the home of Mrs. James Bettner, and for a time it looked as if they were monarchs of all they surveyed. For some months the bees had occupied an unused chimney. The other day they took it into their heads to swarm—and in the house. For a time they had it all their own way. Then a plumber was sent for, and solved the dilemma by fumigating the house. Something like a barrel of dead and stunned bees were swept up as a result of this operation, but it proved a success in so far as cleaning out the bees went.

**FARMERS DISCOURAGED.**—Perris Progress: The magnificent prospects of the dry ranchers for a big hay and grain crop have disappeared in the last few weeks. The rain last Sunday night did not come in time nor in sufficient quantity. The long, dry, hot spell this month was the cause of the trouble. It is now known that on some ranches the last storm will simply make more pasturage, on other lands it will enable mowers with apron attachments to cut a small crop of hay. In some sections farmers still hope that anticipated rains and fogs will mature a crop of hay and grain.

**BIG HAY CROP AT IMPERIAL.**—Press: I. W. Gleason of Imperial reports that the grain crop of that section will be very heavy on irrigated lands. Mr. Gleason says he saw one rancher taking four loads of barley off the acre, and that there was over a ton to the load. The hay sold for \$15 a ton, and there were twenty-two acres. The rancher sowed thirty-five pounds to the acre.

### SAN BERNARDINO.

**MOUNTAIN FRUIT INJURED.**—Times-Index: Mr. Ball of Seven Oaks reports a heavy fall of snow in that part of the county last week. The fruit which was in bloom at the time was all ruined, as the snow gave way to extreme cold weather. It is thought that although the cherry prospects for the Yucaipa valley have been injured there is still a possibility of a fair crop, as it was not nearly so cold there as at Seven Oaks.

**BIG ORANGE TRAIN.**—Sun: In all the history of fruit handling in the valley of San Bernardino and the neighboring fruit centers, the largest orange train ever sent over the Cajon grade was pulled up that incline last Friday evening, when three of the Santa Fe's most powerful engines took in tow a string of forty-one cars, weighing in all 1409 tons, landing them at Summit without a struggle. The train contained nothing but oranges, twenty freezers going iced and the remaining twenty-one without ice.

**ORANGE GROVE PURCHASED.**—Redlands Facts: C. B. Hadley of Philadelphia has purchased the W. D. Clark orange grove. The tract contains thirty acres and the purchase price was \$27,000. It is understood that Mr. Hadley will build a handsome residence on the property. The grove is well known and has been kept in fine condition.

### SAN JOAQUIN.

**FINE STOCK FOR RIVERSIDE FARM.**—Stockton Independent: Peter Krog, superintendent of the Pierce Land & Stock Co.'s Riverside farm on Rough and Ready Island, who went East to purchase a lot of fine cattle, returned with twenty-three head of young registered thoroughbreds, secured from the best herds in the East, many of them being from the Syracuse section of New York State. This makes about 200 head of registered cattle on Riverside farm, which is one of the largest and most up-to-date dairies in the State. The majority of the herd just added is the offspring of some of the best Holstein-Friesians in America, including a selection from the well known Youman herd. The remarkable Holstein-Friesians were chosen as the family best suited to the surroundings, and the Riverside herd is now headed by Oakland Cayuga Chief No. 57100, whose sire, Pieter de Hengerveld Paul DeKol, has more and larger official record-breakers than any other sire in the United States. His dam, Maple-Croft Maid, holds the world's official daily record against all breeds and all ages.

**LOCAL HAY MARKET STRONG.**—The crop prospects have not had much effect on the local hay market, and dealers say that they do not anticipate any cut in prices until the new crop is ready for use. While there is plenty of green feed in California, over in Nevada there is a shortage of it, and hay is in demand. The shipments to that State have been the largest of late that have gone there in many years, and most of the hay used there is from Stockton. A few cars are also being sent each week to the northern part of the State from here. The stocks are also getting

low and hay will be scarce by the time the new crop is matured sufficiently to use.

**A FREAK CHICKEN.**—A freak chicken with four legs and three wings has just been mounted by Lewis McCuen, an attendant at the Stockton State Hospital. The chick was hatched at the residence of W. H. White, who is also an attendant at the asylum, and is of the White Brahmin species. It died at the age of three days and was immediately turned over to Mr. McCuen, who has had much experience in taxidermy. The four legs were well developed. The chicken walked on the rear legs and shook the front ones as though they were wings. The third wing is much smaller than the other two and is attached to the right breast.

### SANTA CLARA.

**GILROY FRUIT DRIER.**—Mercury: Gilroy is to have a fruit drying and packing house of large capacity, reports George T. Dunlap of that city, who is connected with the plant. A local firm of architects has prepared the plans, and they are now in the hands of the man who will construct the buildings. It is probable that the frame will be of Oregon pine and the outer walls of corrugated iron. Machinery is being arranged for and will be on the ground when needed. The Dunlap Realty and Produce Company has leased of Henry Miller for five years all of the Thomas field, bounded east and west by line of the S. P. R. R., and embracing about fifteen acres. This lease is for the benefit of the enterprise, and contemplates the erection of a plant sufficient to handle all the fruit tributary to Gilroy, both green and dry. It is expected that 20,000 trays will be required in the yard, and a packing house 40x100 feet, three stories in height, will be erected by the middle of June, besides two other smaller buildings for box factory and engine house. The packing house will be located immediately on the railroad siding, and will be so contrived that the cured fruit from the yard can be sent through the graders and packed with one handling. Mr. Dunlap's corporation has purchased from the California Packers' Company all its fixtures in the Gilroy freight house, including grader, gas engine, scales, boxes, trucks and 10,000 feet of lumber for bins. The policy of the people who have the enterprise in hand will be to furnish a local cash market for all kinds of green and dry fruit suitable for drying and packing, and to contract for same as soon as the crop is sufficiently advanced that estimates may be safely made of quality and quantity. It is estimated that not less than 100 people will be required in the drying yard and packing house during the heavier part of the season, and with present crop prospects realized 150 cars of the dry product will be the first season's output.

**ELECTION OF OFFICERS OF FRUIT EXCHANGE.**—At the annual meeting of the stockholders of the Santa Clara County Fruit Exchange, held at San Jose, May 3, the following were elected directors: Philo Hersey, C. F. Wyman, Noel Rogers, J. T. Grant, C. W. Childs, J. A. Whitmore, F. H. Babb, C. P. Bailey and S. H. Shelley. The report of President Hersey showed that 2,402,000 pounds of dried prunes and 1,127,000 pounds of other dried fruit has been received during the year. Most of this has been sold. The report showed that there was \$10,000 on hand, profits accrued on charges made for packing during the three years past, ready to be refunded to the members.

### SANTA CRUZ.

**FRUIT NOTES.**—Watsonville Pajaronian: Cherries are setting nicely and fruit men say that the prospects for a heavy yield were never better at this season of the year. Apple crop prospects at present are very good. The trees are in blossom, and they give promise of a big crop of the leading varieties. Late reports are to the effect that while the apricot crop is going to be good in Pajaro valley, it will not be as heavy as was expected a few weeks ago in sections in the northern part of this township.

**CANKER WORM APPEARING.**—The canker worm is making its appearance in the orchards of the valley. The worms are hatching out rapidly and will prove destructive to fruit tree foliage if not checked. The canker worms feed upon the leaves and lessen materially the fruit-bearing powers of trees. A spray of Paris green is recommended highly as a means of eradicating this pest. An arsenical spray is also good. Now is the time to begin a vigorous warfare on the worms. The sooner the work is begun the easier the task will be to free the trees of the parasite.

**LARGER MARKET WANTED FOR BERRIES.**—The berry outlook is not very hopeful in this section. Prices have dropped early and the handlers in San Francisco appear to be in shape to fix prices so that

they will get the cream of the profits. With 850 acres in strawberries in Pajaro valley, almost 1000 acres at Florin in the same fruit, with a heavy acreage in Santa Clara and Alameda counties and the river islands in the same fruit, it looks as if there was going to be another instance of over-production. There are nearly 2500 acres within a radius of 100 miles of San Francisco planted to strawberries, and the greater part of this crop will be marketed at San Francisco. The strawberry crop of these districts will reach 5000 tons. Unless new markets are found and opportunities are given to ship this fruit cheaply to distant points, there will be a shrinkage in the strawberry business in the near future.

### SONOMA.

**PRUNES PROMISE LIGHT YIELD.**—A careful investigation of conditions in Sonoma county leads to the belief that the prune crop there will be light. It is argued that the rain caught the blossoms just at the wrong time and prevented their setting.

### SUTTER.

**BUYERS HUNTING CHERRIES.**—Sutter County Farmer: Several buyers have been in this vicinity recently looking up the cherry crop and we understand that offers as high as 3½¢ per pound in bulk delivered at the depot have been made.

**FRUIT CROP PROSPECTS.**—While somewhat early to give correct estimates on the fruit crop of this section, the present outlook is as follows: Peaches, average crop; apricots, full crop; pears, three-fourths crop; cherries, average crop; plums, prunes and almonds, two-thirds crop; apples, average crop. Grapes are beginning to blossom and the outlook is good for an average crop.

### TULARE.

**HEAVY SETTING OF FRUIT.**—Visalia Delta: Thomas Jacob exhibited some fruit boughs loaded to their greatest capacity. An apricot bough of about 20 inches in length contained twenty-eight large and well-developed apricots and were evenly separated, not hanging in clusters. Several branches from prune trees were loaded so heavily as to be too thick to mature. Mr. Jacob states that his entire crop of all kinds of fruit is similar, and, unless an unusual frost comes (something he does not look for), the fruit harvest in this vicinity this season will be enormous. Several men will be put to work on the Jacob ranch soon thinning the heavily burdened trees. If left without some being taken off, the orchard at the time of harvest would look like a cyclone had passed through it.

**GOPHER DOES HARM TO FRUIT TREES.**—Charles Thompson, an old pioneer of this county, who resides near Farmersville, while engaged in irrigating his orchard last week, unearthed a family of gophers. He noticed one of the large fruit trees looking rather diseased and anything but thrifty. He began an investigation by digging away the dirt from the base of the tree and was amazed to find a den of gophers numbering ten. Not one escaped the rusty shovel to seek a more hidden home. To ascertain the exact cause of the sickly appearance of the tree, Mr. Thompson dug deeper and found almost every root feeding life to the tree eaten into and severed from the base of the tree. He uses as a preventive, where gophers are numerous, pulverized glass, placing it in the hole where the young tree is to be planted.

**A BIT OF BEE EVIDENCE.**—Tulare Register: Now that people are so suspicious of the busy bee as a distributor of the pear blight, it may not be out of place to cite a case that would seem to be in favor of the bee. W. B. Cartmill has a pear orchard three miles from home, and with no apiary very near it, that is badly blighted. He has another orchard at home right along by the side of the apiary with seventy-five stands of bees very tirelessly at work that has considerable of a crop left on it, though also afflicted with blight to some extent. Of course, this evidence is not conclusive, but leans a bit in favor of the bees.

## Horse Owners! Use

GOMBAULT'S

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The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blenches from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blench. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular. THE LAWRENCE-WILLIAMS CO., Cleveland O.





## THE HOME CIRCLE.

## Counter-Thoughts.

What is the baby thinking about?  
 Very wonderful things, no doubt.  
 What are the old folks thinking about?  
 Very wonderful things, no doubt.  
 A thought like this filled the baby's head  
 (A wonderful baby, and very well read).

He gazed at grandpa and grandma, too;  
 And mirrored the pair in his eyes of blue,  
 As side by side they sat there, rocking—  
 He with his pipe, and she with her stock-  
 ing.

And the baby wondered, as well he might,  
 Why old folks always were happy and  
 bright;  
 And he said in his heart, with a blithe lit-  
 tle start,  
 That showed how gladly he'd act his  
 part:

"I'll find some baby, as soon as I can,  
 To stay with me till I'm grown an old  
 man,  
 And, side by side, we'll sit there, rock-  
 ing—  
 I with my pipe, and she with her stock-  
 ing."

—Mary Mapes Dodge.

## Brother Abner's Awful Cat.

Abner Ragner, a settler in a wild, desolate region of southern Wyoming, 50 miles from the railroad, captured a little fat, furry, downy ball of pale yellow and white, not unlike a lion's whelp. Its eyes were just open; it was too young to lap from a saucer at first, but after a few weeks it learned to lap milk, on which diet it grew up to be a docile and obedient cat, much beloved by all who knew it.

Tom, as he was called, was of about the height of an English setter, but with a shorter, thicker body, covered with silky fur of bright amber on the back and sides; underneath and on his paws his coat was pure white, decorated with rings of black. He had an intelligent pretty cat face, lighted by big amber eyes, whose pupils, mere slits of black down the center, would widen and narrow according to his emotions, just like those of any other cat.

Tom never taught Abner any "tricks" except that of jumping over a broom handle, but the cat was very imitative, and tried to do many things that he saw his master do. Thus he often tried to drink from a dipper. He would sit up, take the dipper in his fore paws, and carry it toward his mouth, but he never succeeded in drinking the water, always spilling it on his front, whereupon he would fling dipper and all over his head.

He slept like a Christian, for he would get into bed with Abner, put his head on the pillow, straighten out, and pull the covers up to his chin. But he purred so loud with satisfaction all the time he was awake in bed that Abner could not go to sleep until Tom's purring ceased in slumber.

At the first streak of daylight he would throw off the covers, spring into the air nearly to the ceiling and come down on Abner, if the man did not move out of the way or else get up.

A great practical joker was Tom. All the dogs in the neighborhood were afraid of him, with good reason, and he knew it. How to get them to attack him was his problem. Sometimes he succeeded by pretending to be crippled, and limped along to catch the dogs' attention. Thinking their time for revenge had come, they would rush at him. Then he would suddenly sit up and knock them down with a single blow of his paw as fast as they came at him, even if there were eight or ten of them.

Tom sat at the table with Abner during meal times, and ate from a plate, catching up bits of food and conveying them to his mouth on one claw in a manner considered very conventional. Abner had lived alone so many years that he had become somewhat free in his table manners, and was accustomed to sop his bread in the gravy dish. Tom, the mimic, followed his master's example in this particular, and was very expert in it, sinking his claws in a biscuit or a piece of bread, sopping it

soberly in the dish, returning it to his plate.

Abner was of New England stock. He had come west from a small town in Connecticut, where his two sisters Elizabeth and Olive, or "Ollie," had remained for many years after he had migrated.

When Miss Elizabeth was thirty-five and Olive about twenty-five he began to insist that they should pay him a visit. He hoped they would like Wyoming and stay with him.

The twelve years since they had seen Abner seemed much longer to them, because he was such an indifferent letter writer. There was plenty to write about, but he thought the little happenings of his life would not interest his correspondents, and so he had never mentioned Tom.

"What would they care about a wild cat?" he reasoned. But now and then he made his letter more interesting by enclosing a money order or a check, with the request that they buy some little presents for themselves to remember him by; for Abner had a big, generous heart, and he had prospered exceedingly in cattle.

One day it occurred to him to go over and spend the night with Silas Hope, a ranchman who lived 5 miles away. Accordingly he saddled Mike, his favorite horse, opened a window in the cabin so that Tom could come and go at his pleasure, and put things to right a little, in case some wayfarer should come in while he was gone.

It never occurred to him to lock the door. If any man in that locality had locked his door, it would have been considered an insult to all the other inhabitants of the place. Indeed, there was not a lock bar or bolt on any door in all the settlement.

Abner Ragner supposed that his cabin would be tenantless that night, but two unexpected visitors had for some days been on their way to make him a visit. After many talks, consultations and hesitations his two sisters in Connecticut had made up their minds to go out and see him. Olive had proposed writing to Abner and telling him when they would arrive at Medicine Bow, but Elizabeth interposed:

"No, we'll arrive unexpectedly. I want to see just how he lives!"

They knew the mail was carried out to Abner's settlement from the Bow on Tuesday of each week, and so timed their trip as to be able to ride out with the postman.

On a Monday evening they arrived at the Bow, and the next morning they left the hotel and made their way, under the guidance of a small boy, to the postoffice store, where, they were told, they could find Klondike, the mail-carrier.

Once out in the crisp air and brilliant sunshine, the sisters looked about them in astonishment at the little streetless, yardless, fenceless, shadeless, grassless, treeless frontier town which clung close to the railroad.

When they reached the store they found Klondike busily engaged, helping the merchant pack some boxes of provisions to take out to the settlement.

He told them very cordially that they were more than welcome to ride out to Abner's ranch with him, and he directed them to sit down on a case of overshoes until he was ready to start, which would be in a few minutes.

The two women obeyed, watching the packing of the boxes with wonder. Surely a curious collection of things to be taken to a farming district, as they termed the settlement—such quantities of fruit and vegetables! When Klondike had finished putting up a large box of condensed milk and cream, Olive's curiosity overcame her diffidence.

"Are there no cows in Little Medicine?" she asked.

"Yes'm," answered Klondike, respectfully, as he fitted a lid on the box, "there's slob and gobs of cows, but we ain't much struck on roundin' 'em up nights."

The sisters, not understanding Klondike's phraseology, looked at each other in silent perplexity and in some dismay. But when they were once out on the

vast prairies their spirits rose. Looking back they fancied the crest of white on Elk mountain resembled a stately marble palace, with turrets, towers and corinthian pillars.

They saw herds of antelopes feeding, and then, whisk! puff! the creatures vanished in the open like a whiff of smoke. At intervals they came upon bleached skulls, the only reminders of the vast herds of buffalo that once fed on the table-lands; or the desiccated carcasses of sheep, which had perished miserably in the storms of winter.

Looking backward, Klondike, with his whip, pointed out some of the surrounding towns, marked by puffs of bluish vapor hovering in the clear, dazzling atmosphere. The column of black at the right was Carbon, that next to it was Hanna, while far down at the left the tiny ring of smoke, like that from a man's pipe, was Laramie.

Before them the wonderful prospective held still greater surprises. A small white sunbonnet outlined against the blue became gradually transformed into a sheep wagon; in the remote distance they descried a wasp and two black ants, which on nearer acquaintance proved to be a man on horseback and two dogs.

"Well," sighed Elizabeth, at last, with a tone of one who admits a damaging truth, "there's more sky in Wyoming than there is in Connecticut."

"And more land," added Olive. "I believe we shall always go on like this and never get anywhere. It is an unchanging earth and an unchanging sky," she continued, in an awed voice, "and I feel like a little worthless atom sandwiched between the two."

"There is certainly something in this country calculated to take the conceit out of one," said her sister.

Olive, overcome with drowsiness incidental to the high altitude, finally crept into the back of the wagon, where she slept with her head on a sack of dried apples. When she awoke, she was sure they had stopped all the time to rest the horses, for nothing was at all changed. The mountains, the plains, the sage, everything remained the same, while the gray broncos pushed forward tirelessly on their quick, round trot.

It was between six and seven o'clock in the evening when the two women arrived before the door of Abner's two-roomed log cabin. Elizabeth knocked. As there was no reply, she ventured to lift the latch.

"Ab can't be very far off, for the door's unlocked," said Olive, as Klondike drove away.

"He's probably working in the—in the fields," remarked Elizabeth, doubtfully, glancing vaguely over the expanse of sage brush. "There doesn't seem to be any garden," she added gravely, "nor a sign of anything planted. I hope Abner isn't getting shiftless."

"We'll have supper ready, anyway," said Olive, "I'm simply famished."

Soon they built a fire, and set the table with fried bacon, tea, and a baked dish known in New England vernacular as "johnny cake." Not knowing when their brother would arrive, they decided to sit down at once, and were about to do so when they were frightened almost to fainting. Tom leaped through the open window.

They had seen wildcats in cages and in pictures. This one bore in his horrid mouth a struggling mountain-rat.

Elizabeth screamed, but Olive scrambled up a short ladder leading to the loft, where Abner kept his shotguns, ammunition and fishing tackle. She was speedily followed by her sister, and together they drew up the ladder.

Tom, meanwhile, sat down and watched the erratic movements of his visitors without apparent emotion. He had probably planned to worry the rat for a while on the cabin floor before killing it; but on scenting the fried bacon and seeing that a feast was already spread, he abandoned his intention, and by a dexterous shake broke the neck of his little victim.

Of what followed, the Ragner sisters could speak afterwards only with bated breath. The animal acted like one of the bewitched creatures of the old story-books that tell of men turned

into cats by enchantment. Tom seated himself at the table, helped himself to bacon, sopped his bread in the gravy and ate it, piece by piece from the end of a claw.

Gradually a sensible idea stole into Olive's mind. "He acts like a performing animal at a show," she whispered.

"Hush!" quavered Elizabeth trembling.

Tom, having finished his supper, went back to his dead rat. Taking it up in his teeth, he approached a loose board in the floor, clawed it and deposited his quarry underneath, with the evident intention of serving it at some future repast. Next, he sat down in the middle of the floor and washed his face with painstaking care. Then he regarded the excited woman in the loft with a wide yawn that disclosed two rows of horribly suggestive white sharp teeth.

He seemed to be buried in thought for a few minutes; then he approached the bed in the corner, turned down the blankets, got in, put his head on the pillow, drew up the covers under his chin and began to purr in loud harsh gutturals. One paw lay outside the cover, and the watchers could see the long claws alternately tighten and relax with the rhythm of his song; his mouth seemed stretched in a soporific smile as he sang himself to sleep. He had dined, he had washed, he was comfortably disposed in bed; what more could a reasonable cat wish? He was in a state of beatific somnolence.

"Elizabeth," said Olive, "we are making fools of ourselves! That animal is tame."

"He may be tame," said Elizabeth, doggedly, "and we may be fools, but I shall not expose my life to the caprices of any wild beast."

So saying, she doubled her feet in like a Turk, and leaned wearily against a rafter.

"It reminds me of little Red Riding Hood," went on Olive. "What sharp teeth you have, grandmother!"

"You ought to be ashamed of yourself for joking when our lives are in danger!" snapped Elizabeth.

The loft was narrow and incommensurable and their positions were cramped and painful.

"I'm going to rise a descent, anyway," said Olive, at last. "I'm suffering here," and I don't believe the creature will hurt me."

She softly but resolutely put down the ladder and descended. Seeing her sister was not devoured, Elizabeth finally followed. But they sat very quiet, bolt upright on the hard wooded chairs all night, starting convulsively ever and anon as Tom fitfully growled and snarled, pursuing imaginary game in his sleep.

The sisters, holding hands and half dead with fatigue, hailed with joy the first beams of dawn; but then they had a new scare, for Tom kicked off the covers, sprang to the very ceiling, and, falling back on the bed, stood and glared at them. He seemed to hear something coming. Soon the sisters heard it, too—the hoofs of a horse. The horse stopped at the house, and a brown-bearded man entered. What was the horror of the women when the awful wild beast sprang up, put his forepaws on the man's shoulders, and licked his face from brow to chin.

"Down, Tom!" said Abner, good-naturedly.

Then his eyes fell on his visitors, his astonishment becoming delighted recognition. He took them both in his arms at once, while veritable tears of joy rolled down his cheeks. He was so glad, so glad! But how did they get there? Were they not tired and hungry?

"I see you have made the acquaintance of my pet wildcat," he added. "I'm right glad Tom was here, for though there isn't the slightest danger of your being disturbed by any one hereabouts, still the cat is so much company!"

"We're very, very hungry, Ab," said Olive, who was half laughing, half crying with excitement and fatigue. "The cat ate up the supper, and we haven't had anything since yesterday noon's luncheon."



"Yes, brother, and we're about tuckered out, too," added Elizabeth. "We sat up all night. The cat occupied the bed."

"Thunder!" ejaculated Abner, aghast. "What did you let him do that for? Why didn't you pull him out?"

The two women looked at each other shame-faced, embarrassed. Then Elizabeth straightened up and replied with dignity:

"Why, brother, it being your cat, we thought we'd just humor him and let him do anything he pleased!"—Youth's Companion.

#### One Woman to Her Lover.

That the following view of a woman's situation and feelings after the accepting of a proposal of marriage is not fantastic there will be many a reader to testify. It appears in "Confessions of Wife" in the May Century. The heroine writes to her accepted lover:

"Dear, what have we done? Oh, what have we done? Why did you make me love you? I was quite happy before. All my days rose and set in peaceful easts and wests—gray and rose in sunlight colors. Now I am caught up into a stormy sky, dashed with scarlet purple and fire, and swept along—I don't know where, I don't know why—carried away from myself, as I used to dream that I should be if I let myself out of the window, and did not fall, but were taken up by the wind, and borne to the tops of the elms—never any higher, so as to be dangerous, but whirled along over the heads of people, out of everybody's reach.

"Now we are swept along together, you and I, and I am out of everybody's reach but yours. And, now that I and my dream are one, I am afraid of my dream; and I am afraid of you. Why did you love me? Why did you make me, why did you let me, love you? For you did—you know you did; you made me do it. I didn't want to love you. Haven't I entreated you by every look and word and tone these ten weeks past, not to make me love you? My heart has been a beggar at your feet all the spring and summer, praying to you not to let me love you. You know it has. You are not a stupid man. You knew I didn't mean to love you, Dana Herwin; or, if you didn't know it, then I take it back, and you are a stupid man, and you deserve to be told so. Of course you know I had to be decent and friendly, and I didn't keep out of your way altogether. How could I? If I hadn't been friendly with you, that would have been telling. Nothing gives away the secret of a girl's heart quicker than that—not to dare to be friends with a man. She might as well propose to him and done with it, I think. Of course I had to treat you prettily.

"But I didn't want to love you this way, not this way. I didn't want to marry you. I never thought of such a dreadful thing! And I wish you to understand, sir, that it is very disagreeable to me to think of it now. I will be honest with you at the beginning of everything. If a woman is honest with herself and her love, she must be honest with the man she loves. And I tell you, sir—for it is the truth, and I've got to tell you—if I could unlove you I would do it this minute, and stand by the consequences."

FARMER—So you've had some experience, have you?

New Man—Yes, sir.

Farmer—Well, what side of a cow do you sit on ter milk?

New Man—The outside.

"THAT is what I call a master stroke!" he exclaimed. "Oh, do read about it!" said his wife. "It's rather long. Look at it for yourself. It's one of the cleverest strokes of diplomacy"—"Oh, diplomacy! I thought it was something about golf."

TEACHER: Johnnie, when Satan comes to tempt us to do wrong, what should we say? Johnnie: Go 'way back and sit down.

#### You Passed My Door.

You passed my door to-day—although  
You would not have me think it so;  
Unheralded by ear and eye,  
Unseen, unheard, I knew you nigh,  
As springtide knows when blossoms grow.

A fancy? Nay, I only know  
Love whispered 'tween a smile and  
sigh,  
"The little one you love goes by"—  
You passed my door.

Dear, were your footsteps fast or slow?  
One look or none did you bestow?  
I wonder if you care that I  
Waited and listened wistfully,  
When, carelessly as strangers go,  
You passed my door.

—Theodosia Garrison.

#### The Canary's Siege.

A TRUE STORY.

"Danny," the canary, had always enjoyed the long summers on the front veranda, where his roomy cage was hung in early May. Having no mate, he comforted himself with an interest in all the other feathered folk who came about his home near enough to be seen and heard. He began to imitate their notes. He soon learned the song of the oriole whose nest hung in a maple tree close by, the whistle of the old green parrot across the street, and the twitter of the little chickens whose mothers sometimes led them into the front yard.

One morning in midsummer there arrived among the honeysuckles a pair of house-wrens, bent upon finding a place for a new home. Danny watched the noisy visitors with interest, and attempted an imitation of their notes. The wrens, however, flew into a rage instantly, and, alighting on the cage, silenced the astonished canary with a stream of angry chatter such as he had never heard before. Moreover, their examination of the cage put a new notion into their heads; they decided that on its flat top they would build a nest, and live on the roof of a gilded palace, if not inside one. Away they flew, and in a jiffy they were back again, and had carefully arranged a foundation of twigs on the top of the cage, Danny looking on in amazed silence. But the invasion of his premises was not to be permitted, of course, and as soon as the insolent little squatters flew off for more building material, Danny dragged through between the bars all the sticks they had arranged. Back they came presently with more twigs, and at once discovered what had been done in their absence. Instantly they dropped their sticks and in a great passion began an attack on the poor canary, who curled up, a trembling little ball of yellow fluff, on the floor of his cage, just out of reach of the long beaks they thrust with lightning-like swiftness through the bars. At last, having, as they thought, reduced the canary to a state of fear that would keep him from further resistance, they picked up their twigs, once more laid the foundation of their nest on top of the cage, and went off for another load.

The canary, however, was not yet wholly subdued, and no sooner were the wrens out of sight than he again pulled their foundation sticks through the bars, and, when he saw his besiegers returning, prudently retreated to the only safe spot beyond the reach of their beaks. The rage of the wrens when they found their second foundation destroyed knew no bounds. Over the bars of the cage they ran, screaming and scolding, and trying to seize with their little bills the almost paralyzed canary, or to drag through the bars such of their twigs as they could reach. Finally they again rearranged their foundation, and Mistress Wren went alone for more material while her mate remained to guard the foundation. The case of the canary was now hopeless; his strength near gone, his courage wholly gone; and so his human friends seeing the contest had reached this stage, came to his rescue.

The insolent invasion of the wrens was not to be borne, of course. Yet it seemed possible to make respectable and useful veranda citizens out of these

The MAN and the HOUR  
meet by the time of an

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dashing free booters, and plans were laid to that end. An old strawberry box was found, a top fastened over it, a hole was cut in one side for a door, and it was tacked inside the cornice of the veranda near the ceiling. Danny's cage was cleared of the wrens' building materials, the twigs being put into the box. When the wrens returned, the pair took in the new suggestion instantly. A long and noisy discussion followed; repeated investigations of the box, inside and out, were made, intermixed with much scolding of Danny and his rescuers. At last, however, the wrens decided to accept the concession offered.

Danny's nerves were shaken, and his vanity certainly received a great setback; but in time he learned to listen to the wrens' boasting without fear, while they ceased to resent his perfect imitation of the softer notes of their song.—Mary D. Leonard in May St. Nicholas.

## DOMESTIC ECONOMY.

### Domestic Hints.

PINEAPPLE WHIP.—Grate and drain on a sieve one pineapple. Beat the whites of three eggs to a froth, and add gradually three tablespoonfuls powdered sugar. Beat until stiff, then flavor with one tablespoonful sherry and tablespoonful orange juice. Whip one pint of cream to a stiff froth and add slowly the beaten eggs. Pour in the pineapple gradually and set on ice till very cold. Serve in ice-cold punch glasses.

LIVER HASH.—One pint of cooked liver, one cup of cold water, one tablespoonful of butter, one teaspoonful of flour, one teaspoonful of lemon juice, half a teaspoonful of salt and one-fourth of pepper; cut the liver into pieces the size of a penny, and measure after cutting; heat the butter and stir in the flour, cooking and stirring until brown, then add the water gradually and season with the salt and pepper; place the liver in this sauce and simmer very gently twenty minutes; add the lemon juice and serve very hot.

NUT COOKIES.—One pound of light-brown sugar, two eggs, one cupful of lard, one cupful of sour milk, one generous teaspoonful of soda, one cupful of hickory nuts or any preferred nuts, chopped fine, and enough flour to form a dough that will roll out. Rub the sugar and lard together and mix until they cream, and put in the eggs, which have been previously well beaten. Stir the soda into the milk and add that, then stir in the nuts. Add a little flour at a time until the dough is stiff enough, roll out thin and cut in round or fancy shapes. Place these on greased pans and bake in a quick oven for not more than five minutes.

FISH CROQUETTES.—Mix together one pint of cold flaked fish and one pint of hot mashed potatoes and one tablespoonful of butter; mix this well, then add one-half cupful of milk, one well-beaten egg, one-third teaspoonful of pepper, one teaspoonful of salt, one-half teaspoonful chopped parsley. Mix again and put away to cool.

When cold make into balls, roll in egg and crumbs, fry in deep hot fat. These may be made the previous day all but the frying.

### Hints to Housekeepers.

A weak solution of oxalic acid and water is advised to clean and freshen leather chairs. They should be rubbed afterward with a chamois skin or woolen cloth.

An easy and satisfactory way to remove dust from a painted floor is to wet a flannel bag, wring it out as dry as possible, put it on the broom and drag it in even strokes over the floor.

Cornstarch is a valuable food, but it rarely gets cooking enough to take away the raw taste and flavor that is natural to it in the uncooked state. Cornstarch pudding or the blanc-mange made from it is objected to by many persons, and particularly by children, to whom it would be, if palatable, a nourishing food.

Flannel blankets may be successfully cleaned by using borax and soft soap. Put two tablespoonfuls of borax and a pint of soft soap into cold water enough to cover the blankets. When the borax and soap have become dissolved, put in the blankets and let them stand over night. The next day rub them out, rinse them in two waters and hang them to dry. Never wring them.

To make candied sweet potatoes cut cold sweet potatoes in quarters or slices, and spread them on an earthen baking dish. Sprinkle them with bits of butter and granulated or brown sugar. Repeat with each layer, but if it is desired to have all the pieces brown have only one layer. Bake in a quick oven until the sugar has thoroughly dissolved and permeated the whole, and remove when it is slightly brown.

One can make such a great variety of frozen good things at home with comparatively little effort, and they are so much better and cheaper than those that are bought, that nowadays a kitchen is scarcely considered complete that does not number a freezer among its possessions. But if the family is small, do not make the great mistake of purchasing a large size in anticipation of "company days;" better by far have two, the smaller one for general use, the larger one for occasions, and you will soon find it will pay in the difference of time required, and the amount of ice consumed in making.

A cream mayonnaise, in which butter is substituted for oil, is made by mixing in the inner vessel of a porcelain-lined double boiler a large tablespoonful of butter, four tablespoonfuls of vinegar, a half-teaspoonful of salt and a half-teaspoonful of dry mustard. When thoroughly mixed put the vessel in its saucepan filled with boiling water, and set over the fire. Stir the mixture carefully till very hot, when two well-beaten eggs may be added, the whole stirred until thick. Add a half pint of cream, stir, take from the fire, and allow to get perfectly cold. This is a good dressing for chicken or sweet-bread salad.



## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, May 7, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July	Sept.
Wednesday.....	75 3/4 @ 76 1/4	74 3/4 @ 75 1/4
Thursday.....	75 3/4 @ 77 1/4	75 @ 76 1/4
Friday.....	77 1/4 @ 76 3/4	76 3/4 @ 75 1/4
Saturday.....	77 @ 75 3/4	76 3/4 @ 75 1/4
Monday.....	75 3/4 @ 74 3/4	75 @ 73 3/4
Tuesday.....	75 @ 75 3/4	74 3/4 @ 74 3/4

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	July	Sept.
Wednesday.....	35 3/4 @ 34 3/4	30 3/4 @ 29 3/4
Thursday.....	34 3/4 @ 35 3/4	29 3/4 @ 30 3/4
Friday.....	35 3/4 @ 34 3/4	30 3/4 @ 29 3/4
Saturday.....	34 3/4 @ 34 3/4	30 3/4 @ 29 3/4
Monday.....	34 3/4 @ 33 3/4	29 3/4 @ 29 3/4
Tuesday.....	33 3/4 @ 34 3/4	29 3/4 @ 29 3/4

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May	Dec.
Thursday.....	1 11 3/4 @ 1 11 1/2	1 09 @ 1 10
Friday.....	—	1 10 3/4 @ 1 10
Saturday.....	1 11 3/4 @ —	1 09 3/4 @ 1 09 3/4
Monday.....	1 11 3/4 @ 1 11 1/2	1 08 3/4 @ 1 09 3/4
Tuesday.....	1 12 3/4 @ —	1 09 3/4 @ 1 09 3/4
Wednesday.....	—	1 09 3/4 @ 1 08 3/4

## WHEAT.

While the outward movement of wheat from this port last month was lighter than for any previous month since last September, it was of very fair proportions for this season of the year and decidedly ahead of the export movement for corresponding period last season. There were 19 clearances of wheat in April, including the mixed cargoes, making an aggregate of 43,725 tons, value \$990,000. In April of last year there were only nine wheat clearances, footing up 23,800 tons, showing a valuation of \$587,300. Last month the wheat stocks in warehouses in the immediate vicinity of San Francisco were reduced nearly 17,000 tons, showing that 40% of the shipments for the month came from local warehouse reserves. For corresponding month last year the stocks in same warehouses showed a slight increase and were 104,700 tons, as against 62,900 tons at this date. Noteworthy in the shipments of current week was a clearance of 560 tons per steamer for New Zealand, same vessel taking 11,000 barrels of flour for same destination. A ship of about 3000 tons capacity was chartered to carry wheat to Cape Town, the rate being 26s. 3d. Charter rates on wheat ships to Europe are ruling fairly steady at 23s. 9d. to 25s. for medium size to small vessels. There is no great quantity of wheat offering from any quarter, and buyers find it necessary as a rule to pay full current figures. Market closed firm but quiet.

California Milling.....	1 13 3/4 @ 1 16 3/4
Cal. No. 1 shipping, alongside.....	1 11 3/4 @ 1 12 3/4
Oregon Valley.....	1 12 3/4 @ —
Washington Blue Stem.....	1 12 3/4 @ 1 16 3/4
Washington Club.....	1 08 3/4 @ 1 11 3/4
Off qualities wheat.....	1 07 3/4 @ 1 10

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	6s2 3/4 d @ 6s3 d	6s4 3/4 d @ 6s5 d
Freight rates.....	32 1/4 @ 35s	23 3/4 @ 25s
Local market.....	1 00 @ 1 02 3/4	1 11 3/4 @ 1 12 3/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.11 1/2 @ 1.12 1/2.
December, 1902, delivery, \$1.10 1/2 @ 1.08 3/4.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.09 1/2 @ 1.08 3/4; May, 1902, \$1.12 1/2 bid.

## LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on May 1st and April 1st:

Tons—	April 1st.	May 1st.
Wheat.....	79,564	*62,926
Barley.....	23,853	†13,278
Oats.....	6,454	5,789
Corn.....	891	—

\*Including 36,205 tons at Port Costa, 25,192 tons at Stockton.

†Including 7,387 tons at Port Costa, 3,442 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 16,638 tons for the month of April. A year ago there were 104,697 tons wheat in Call Board warehouses.

## FLOUR.

There is a fair movement, both to foreign ports and on local account. Values are without material change, but are being well sustained at the quoted range. Supplies are proving sufficient to accommodate the existing demand, but have been much heavier than at present. Stocks in the near future are more likely to show increase than decrease.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

## BARLEY.

Shipments of this cereal are still being made to Europe. A part cargo of 19,200 tons, valued at \$36,500, was cleared the current week for United Kingdom. For the season to date over 210,000 tons of barley have been forwarded outward from this port, as against 98,000 tons for corresponding period previous season, and 190,000 tons two years ago. Prices for export barley show no quotable improvement. Feed descriptions continue to sell to relatively better advantage than the higher grades, most of the barley of 1901 crop being of latter sort. Demand for feed on local account is very fair, market closing firm at the advanced quotations.

Feed, No. 1 to choice.....	98 3/4 @ 1 00
Feed, fair to good.....	95 @ 97 1/4
Brewing, No. 1 to choice.....	98 3/4 @ 1 02 3/4
Chevalier, No. 1 to choice.....	1 10 @ 1 20
Chevalier, poor to fair.....	95 @ 1 05

## OATS.

The English Government is reported to have bought about 4,000 tons of this cereal in British Columbia and on Puget Sound for shipment to South Africa. The local market, however, shows no material improvement in consequence of the above movement. Stocks here are too heavy for the demand at the prices which have been lately asked. Buyers showing disposition to operate in anything like wholesale fashion have been able to obtain concessions.

White Oats, fancy feed.....	1 40 @ 1 42 3/4
White, good to choice.....	1 32 3/4 @ 1 37 3/4
White, poor to fair.....	1 27 3/4 @ 1 30
Gray, common to choice.....	1 30 @ 1 37 3/4
Milling.....	1 40 @ 1 42 3/4
Surprise, good to choice.....	1 40 @ 1 45
Black Russian.....	1 15 @ 1 27 3/4
Red.....	1 22 3/4 @ 1 37 3/4

## CORN.

There is no activity to report in the market for corn of any variety. Prices remain at about the same range as last quoted, but to effect free sales concessions from full current figures would have to be granted buyers. Quotations are based on values for good to choice. Damp or otherwise seriously defective stock will not bring these figures.

Large White, good to choice.....	1 45 @ 1 55
Large Yellow.....	1 37 3/4 @ 1 42 3/4
Small Yellow.....	1 45 @ 1 50

## RYE.

Values are without appreciable change, but there is not much doing, inquiry and offerings being both of very limited proportions.

Good to choice.....	90 @ 95
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## BUCKWHEAT.

Virtually nothing doing in this cereal at present, and values for the time being are wholly nominal.

Good to choice.....	1 55 @ 1 70
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## BEANS.

Additional firmness has been developed in the market for small White and Lady Washington beans, offerings showing decided reduction, but at the higher figures asked buyers are not taking hold so freely. One operator who commenced purchasing when prices were at lowest point claims to have secured 20,000 sacks Small Whites at an average of about \$2.35, the beans being all first class. Limas have been tending against buyers, but trading in them has not been active. In colored beans Bayos have been receiving more attention than any other variety and are being quite firmly held. Pinks are doing better. Black-eyes continue scarce and high prices are asked, but no heavy quantities could be placed at rates now current.

Pea, fair to good, 100 lbs.....	3 25 @ 3 50
Small White, good to choice.....	2 40 @ 2 60
Lady Washington.....	2 50 @ 2 65
Pinks.....	2 10 @ 2 25
Bayos, good to choice.....	3 00 @ 3 10
Reds.....	2 25 @ 2 50
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	3 50 @ 3 60
Black-eye Beans.....	4 50 @ 4 75
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

## DRIED PEAS.

The market is showing little or no life, and there is practically nothing doing in a wholesale way. Quotations are necessarily based on current views or asking prices of holders for good to choice stock.

Green Peas, California.....	1 50 @ 2 00
Niles Peas.....	1 75 @ 1 80

## WOOL.

Trade is still of light volume in this center, but prospects are that business here will show decided increase in the near future. Offerings in the local market during the current season up to date have not included much choice wool, although there has been enough of this sort offering to establish quotations. The general tone of the market is healthy. Labor strikes among woolen operatives East have caused dullness temporarily on the Atlantic side, but there is every probability that Eastern mills will soon again be running on full time and that Eastern manufacturers will be in the market for wool.

## SPRING.

Northern Cal., free.....	15 @ 16 3/4
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	12 @ 15

## HOPS.

Beyond a very light jobbing trade, there is nothing doing in spot stocks of hops. Dealers are quoting 14@17 1/2c., which are jobbing prices. To realize in a wholesale way, it would be necessary to accept 1 1/2 @ 2c. under figures quoted as jobbing rates. There is some contracting of new up to 12@13c. for choice. The Eastern market is thus reported under recent date: "The business of the week in the hop market has been of small volume. Brewers have been busy attending to the matter of licenses, and they have shown very little interest in the purchase of fresh supplies. The quietness has not, however, changed the feeling of confidence that underlies the situation. Statistically the position is strong and those who hold hops are not inclined to hurry matters, believing that everything will be wanted during the next four or five months. The offerings of State stock are especially light and there is scarcely anything left in the interior to draw from. A half dozen of the remaining lots were closed out during the past week at 17@18c. Some of the choicest growths here are held at 20c, but not enough done as yet above 19@19 1/2c to establish a higher quotation. The best of the Pacifics, when wanted, bring 18 1/2 @ 19c, with other grades ranging from 18c down to 15c for common. Yearlings are nearly gone, and the recent trading in old olds has been at relatively full prices. Reports from the interior of this State indicate much work in the hop yards, the weather being very favorable. In the old yards many missing hills are reported, but the new yards are doing well."

## HAY AND STRAW.

The arrivals of hay are not averaging as heavy as preceding month, but there is enough stable hay coming forward to accommodate all buyers and to enable them to purchase at fully as easy figures as have been lately current. Not much cow hay of any sort is now being received, nor is there at present any noteworthy demand for same. Straw is ruling fairly steady, with rather limited offerings.

Wheat, good to choice.....	9 00 @ 11 50
Wheat and Oat.....	8 50 @ 11 00
Oat, good to choice.....	8 00 @ 10 50
Barley.....	7 50 @ 9 00
Alfalfa.....	8 00 @ 10 50
Clover.....	7 00 @ 8 50
Compressed.....	9 00 @ 11 50
Straw, 3 bale.....	40 @ 50

## MILLSTUFFS.

All kinds of mill offal continued in light supply and prices remained about the same as previously quoted, but market was not noteworthy for firmness, buyers operating very slowly at full current figures. Market for Rolled Barley tended against buyers. Milled Corn ruled steady.

Bran, 3 ton.....	17 00 @ 18 50
Middlings.....	19 00 @ 21 00
Shorts, Oregon.....	17 50 @ 19 00
Barley, Rolled.....	20 50 @ 22 00
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

## SEEDS.

Alfalfa is practically out of stock. Flax is arriving in moderate quantity and is moving at generally unchanged values. Mustard is without quotable change; spot supplies are rather light, admitting of only limited jobbing operations. In market for Bird Seed there are no changes to record, either in prices or general tone.

Alfalfa, Cal.....	Per ctt.
Alfalfa, Utah.....	—
Flax.....	2 25 @ 2 50
Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 50 @ 2 65
Canary.....	Per lb.
Rape.....	3 1/2 @ 3 3/4
Hemp.....	3 1/2 @ 3 3/4

## BAGS AND BAGGING.

The Grain Bag market is showing a firm tone, although quotations remain as before. There is more business doing in this line than is ordinarily experienced at this time of year. Wool Sacks are offering at old figures, but are not meeting with much inquiry at present.

Calcutta Grain Bags, buyer June-July.....	6 1/2 @ 6 3/4
Calcutta Grain Bags, spot.....	6 @ 6 1/2
San Francisco Grain Bags, 22x36, spot.....	6 @ 6 1/2
San Quentin Bags, 30x40.....	5 55 @ —
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	8 1/2 @ —
Gunnies.....	— @ —
Bean Bags.....	5 1/2 @ 5 3/4
Fruit Sacks, cotton, three sizes.....	5 1/2 @ 6, 6 1/2
Fruit Sacks, Jute.....	7 @ 7 1/2

## HIDES, PELTS AND TALLOW.

As the grub season is practically over, the Hide market is inclining in favor of sellers, dealers being more anxious to operate and paying better average prices. In quotable values for Sheepskins there are no changes to note, but desirable offerings are not lacking for custom. Tallow is in fair request, commanding practically same figures current for some weeks past.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10 1/2 @ —	8 1/2 @ —
Medium Steers, 48 to 56 lbs.....	9 1/2 @ —	8 @ —
Light Steers, under 48 lbs.....	8 1/2 @ —	7 1/2 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	7 1/2 @ —
Light Cow Hides, under 50 lbs.....	8 1/2 @ —	7 1/2 @ —
Stags.....	6 1/2 @ —	— @ —
Wet Salted Kip.....	8 @ —	7 @ —
Wet Salted Veal.....	9 @ —	8 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ —	14 @ —
Dry Kip and Veal, 11 to 16 lbs.....	14 @ —	12 @ —
Dry Calf, under 4 lbs.....	17 @ —	15 @ —
Salted Horse Hides, large.....	2 75 @ —	— @ —
Salted Horse Hides medium.....	2 25 @ —	2 50 @ —
Salted Horse Hides small.....	1 25 @ —	— @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, medium.....	1 50 @ —	— @ —
Dry Horse Hides, small.....	1 00 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 3 skin.....	80 @ —	120 @ —
Pelts, medium, 3 skin.....	50 @ —	75 @ —
Pelts, short wool, 3 skin.....	30 @ —	50 @ —
Pelts, shearling, 3 skin.....	15 @ —	30 @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good medium.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/2 @ —	— @ —
Tallow, No. 2.....	4 1/2 @ —	4 1/2 @ —
Goat Skins, perfect.....	30 @ —	37 1/2 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

## HONEY.

The market presents an easy tone, but there are no reductions in quotations. Holders of last crop honey are desirous of effecting a clean-up, and buyers are operating in same only to cover most immediate needs. The new crop will soon be on market, and whether it prove large or small, the fact of it being near at hand is unfavorably affecting the situation for spot stocks.

Extracted, White Liquid.....	5 @ —
Extracted, Light Amber.....	4 1/2 @ —
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	10 @ 12 1/2
Amber Comb.....	7 @ 10
Dark Comb.....	6 @ 7

## BEESWAX.

Good to choice, light, 3 lb.....	25 @ 28
Dark.....	24 @ 25

## LIVE STOCK AND MEATS.

Beef is not arriving in heavy quantity, and market is fully as firm as previously noted, with little likelihood of prices soon receding materially. Mutton is as a rule commanding full current figures, with demand sufficient to readily absorb all desirable offerings. The market for Lamb inclined slightly in favor of buyers. Last quoted figures for Veal continued to be well maintained. Hog market still favors the selling interest, with arrivals only moderate and little more than enough to accommodate the immediate demand for fresh pork.

Beef, first quality, dressed, net 3 lb.....	7 1/2 @ 7 3/4
Beef, second quality.....	7 @ 7 1/4
Beef, third quality.....	6 1/2 @ —
Mutton—ewes, 8—c; wethers.....	8 @ 9
Hogs, hard grain fed, 125 to 200 lbs.....	6 1/2 @ 6 3/4
Hogs, small, fat.....	6 1/2 @ 6 3/4
Hogs, large, hard, over 200 lbs.....	6 1/2 @ 6 3/4
Hogs, soft or corn fed.....	5 1/2 @ —
Hogs, country dressed.....	7 1/2 @ —
Veal, small, 3 lb.....	8 @ 9 1/2
Veal, large, 3 lb.....	8 @ 9
Lamb, spring, 3 lb.....	9 1/2 @ 10

## POULTRY.

During the greater part of the week under review the poultry market has inclined against the selling interest, from same cause last noted, too heavy arrivals of Eastern. Offerings of Eastern were mainly old fowls, and for this description the weakness was most pronounced. Large young stock in fine condition sold to tolerably fair advantage.



Turkeys, dressed, choice.....	—@—
Turkeys, alive, Hens, # lb.....	14 @ 15
Turkeys, alive, Gobblers, # lb.....	13 @ 14
Hens, California, # dozen.....	3 50 @ 4 50
Roosters, old.....	3 75 @ 4 00
Roosters, young (full-grown).....	6 00 @ 7 50
Fryers.....	5 00 @ 5 50
Broilers, large.....	3 50 @ 4 50
Broilers, small to medium.....	1 50 @ 2 50
Ducks, old, # dozen.....	4 50 @ 5 00
Ducks, young, # dozen.....	5 50 @ 7 00
Geese, # pair.....	1 25 @ 1 50
Goslings, # pair.....	2 00 @ 2 25
Pigeons, old, # dozen.....	1 75 @ —
Pigeons, young.....	1 75 @ 2 00

## BUTTER.

Although demand is mainly on local account, it is sufficiently active to keep the market much more favorable to sellers than is generally the case at this time of year. Most of the present demand is for future needs, dealers desiring to do the bulk of their storing and packing during the next thirty days.

Creamery, extras, # lb.....	20 @—
Creamery, firsts.....	19 @—
Dairy, select.....	19 @—
Dairy, firsts.....	18 @—
Mixed store.....	16 @17

## CHEESE.

No changes of moment have been effected in the cheese market since last review. New is not in very heavy stock, but is in sufficient supply to give buyers the advantage. Not much old on market, and choice is commanding in a small way tolerably stiff figures. Market for Eastern cheese is decidedly firm.

California, fancy flat, new.....	9 1/4 @ 10 1/2
California, good to choice old.....	10 @ 11
California, fair to good.....	— @ 9 1/2
California, "Young Americas".....	9 @ 11

## EGGS.

Prices have been again advanced, and the market shows as a whole a firm tone, although it is doubtful if speculative operators or buyers on cold storage account will purchase as freely at full current figures as they did prior to the advance. It is likely that market for choice to select eggs will soon develop more firmness, and that there will be a wider range in values than at present.

California, select, large, white and fresh.....	18 @ 19
California, select, irregular color & size.....	16 1/2 @ 17 1/2
California, good to choice store.....	15 1/2 @ 16 1/2

## VEGETABLES.

Market for most kinds of spring vegetables inclined in favor of consumers, with the aggregate of receipts on the increase. Especially were Asparagus, Rhubarb and Peas in free receipt. Tomatoes proved an exception, being in light supply and bringing good prices. New Onions were in fair supply, but they were not sufficiently ripe to be suitable for shipment. Stocks of old Onions now on market are principally Nevada and Australian product. The latter are selling from second hands at \$3.25@3.75 per cental, as to quantity and condition.

Asparagus, # box.....	1 00 @ 2 00
Beans, String, # lb.....	10 @ 15
Beans, Wax, # lb.....	8 @ 12 1/2
Cabbage, choice garden, # 100 lbs.....	50 @ —
Egg Plant, Los Angeles, # lb.....	15 @ 17 1/2
Garlic, # lb.....	2 1/2 @ 3 1/2
Onions, Yellow Danver, # cental.....	2 25 @ 2 75
Onions, New Red, # cental.....	1 00 @ 1 75
Peas, Sweet garden, # lb.....	2 @ 2 1/2
Peppers, Green, Los Angeles, # lb.....	10 @ 15
Rhubarb, # box.....	50 @ 1 00
Summer Squash, # box.....	1 00 @ 1 25
Tomatoes, # box.....	1 25 @ 2 00

## POTATOES.

A firm market has been experienced for old potatoes desirable for table use. There are very few other than Oregon Burbanks now on market. The Portland steamer arriving Monday brought 8,612 sacks, and sales were made ex-wharf at \$1.90@2.17 1/2, the latter figure being for very select. Most of the business was within range of \$2.05@2.15. New potatoes sold at much the same figures as preceding week, with no heavy offerings and demand wholly local. Merced Sweeties were in moderate receipt and in a jobbing way were held at \$2.25.

River Burbanks in sacks, # cental.....	1 60 @ 1 90
Petaluma and Tomales Burbanks.....	1 60 @ 1 90
Oregon Burbanks.....	1 90 @ 2 17 1/2
River Reds.....	1 40 @ 1 50
New Potatoes, # lb.....	2 @ 2 1/2
Sweeties, Merced, # cental.....	2 00 @ 2 25

## The Fruit Market.

## FRESH FRUITS.

Cherries are arriving in light quantity, but offerings up to date have included few which were sufficiently ripe to be desirable. Sales were mainly within range of \$1.00@1.50 per box, as to size of package and quality of fruit. Increased receipts and improved qualities are looked for the coming week. Strawberries sold at a decline, going most of the time at figures within reach of the average consumer. Heavy arrivals of this fruit are in prospect for the next few months. Apples are offering out of cold storage at unchanged figures.

Apples, # fancy, 4-tier box.....	2 25 @ 2 50
Apples, good to choice, # 50-lb. box.....	1 50 @ 2 00
Apples, common to fair, # 50-lb. box.....	75 @ 1 25
Cherries, fair to choice, # box.....	75 @ 1 50
Strawberries, Longworth, # chest.....	7 00 @ 10 00
Strawberries, Malinda, # chest.....	4 00 @ 5 00

## DRIED FRUITS.

Market for evaporated and dried fruits is showing in the main excellent condition, and it is doubtful if it has ever presented better shape at corresponding date in any previous season. Stocks of all kinds, with the single exception of 1900 prunes, are of light volume, and there is an active jobbing movement, both for shipment and on local account. Evaporated Apples are in particularly active request, with market active and higher. Supplies of Apples are so slim, both on this coast and throughout the East, that there is little probability of there being enough to accommodate the demand during the balance of the season, even estimating the consumption during the next few months at a low average, and a still further stiffening of values on a portion of remaining stocks may be experienced. The coming crop of Apples promises at present to be large, but prospects may be altered materially, and for the worse, between now and harvest. Future deliveries of prime New York evaporated Apples, this year's crop, are quoted at 6 1/2c. East, with market firm. The coming crop of Apricots is receiving some attention from speculative operators. Prime to choice in sacks, f. o. b., July delivery, are quoted in carload lots at 6 1/2@7 1/2c. Some San Joaquin are reported offering at 6 1/2c. for early delivery. A few carloads of Vacaville Apricots have been placed at 7c. July. Peaches are being very steadily held, with fair movement at full current rates and stocks by no means heavy. Pears are in such light supply as to hardly warrant quoting. Present offerings of Plums are of limited proportions and on desirable qualities current values are being well maintained. Prune market is quiet at quotably unchanged values, with offerings mostly old. For some of last year's Santa Claras, running little over 80, custom is being sought at 3c.

## EVAPORATED OR BLEACHED.

Apricots, Royal, choice, in sacks, # lb.....	9 @ 10
Apricots, Moorpark.....	10 @ 12
Apples, in 50-lb boxes, rings, pressed, fancy.....	11 @—
Apples, 50-lb boxes, rings, pressed, good to choice.....	10 @—
Nectarines, # lb.....	5 @ 6
Peaches, unpeeled, choice.....	6 1/2 @ 7 1/2
Peaches, peeled, in boxes.....	12 @ 14
Plums, Red and Black, pitted.....	5 @ 6
Plums, White and Yellow.....	5 @ 6
Prunes, 4 sizes, in bags, —@—; 50-60s, 4 1/2@4 3/4; 60-70s, 4@4 1/4; 70-80s, 3 1/2@3 3/4; 80-90s, 3@3 1/2; 90-100s, 2 1/2@2 3/4;—these figures for 1901 crop.	

## COMMON SUN-DRIED.

Apples, sliced.....	4 @ 5
Apples, quartered.....	5 1/2 @ 5 1/2
Peaches, unpeeled.....	6 @ 6 1/2
Pears, prime halves.....	5 @ 5 1/2
Plums, unpitted, # lb.....	1 1/2 @ 2 1/2

## RAISINS.

Not much doing in this line, but market shows steadiness, offerings not being heavy and holders displaying no uneasiness. The demand of the Summer months is likely to absorb all remaining supplies.

Following are the prices for 1901 crop in carload lots:

Loose Muscatels—	Per lb.
4-crown.....	6 1/4 @ —
3-crown.....	5 1/2 @ 6
2-crown.....	5 1/4 @ 5 1/2
Seedless Sultanas.....	5 1/4 @ 5 1/2
Thompson's Seedless, bleached.....	8 1/2 @ 9 1/2
Seeded—	
1-lb. carton.....	7 1/2 @ 8
12-oz carton.....	6 1/2 @ 6 1/2
London Layers, 20-lb. boxes—	
2-crown.....	1 30 @ 1 40
3-crown.....	1 40 @ 1 50

## CITRUS FRUITS.

The Orange market was quiet the past week, and despite decreased offerings, was easy in tone. Consumers are turning their attention to the Spring fruits now beginning to come forward. Demand which existed for Oranges was mainly for choice Navels of medium size. Lemons were in fair supply, meeting with rather slow sale, and for other than most select the market was wholly lacking in firmness. Limes were offered at unchanged figures, with stocks more than ample for the demand.

Oranges—Navels, # box.....	1 25 @ 3 00
Mediterranean Sweet.....	—@—
Seedlings, # box.....	1 00 @ 1 75
Tangerine, quarter box.....	75 @ 1 25
Lemons—California, select, # box.....	2 25 @ 2 50
California, good to choice.....	1 50 @ 2 00
California, common to fair.....	1 00 @ 1 50
Grape Fruit, # box.....	1 00 @ 2 25
Limes—Mexican, # box.....	4 00 @ 5 00

## NUTS.

Market presents a firm tone for both Almonds and Walnuts, with stocks nearly exhausted. In Peanuts there is not much doing, quotations remaining without change.

California Almonds, shelled.....	16 @ 19
California Almonds, paper shell, # lb.....	12 @ 13
California Almonds, soft shell.....	9 @ 10

California Almonds, hard shell.....	5 @ 6
Cal. White Walnuts, No. 1 soft shell.....	10 @ 12
Cal. White Walnuts, No. 2 soft shell.....	8 @ 10
Cal. White Walnuts, No. 1 hard shell.....	9 @ 10
Cal. White Walnuts, No. 2 hard shell.....	7 @ 8
Peanuts, California, fair to prime.....	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.....	5 1/2 @ 6
Pine Nuts.....	5 @ 6

## WINE.

The wholesale market is quiet, with no urgent inquiry from dealers and no heavy quantities offering from first hands. In quotable values there are no changes to note, the range on dry wines of last year's vintage being 22@26c. per gallon. Spot stocks are not of large volume for this time of year. There is a very fair movement from second hands, mainly of blended wines. The steamer Argyll, sailing from this port the present week, took as part cargo 355,600 gallons of wine for New York. Small shipments were made to Central and South America, Mexico, the Orient, and to islands of the South seas.

## Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	130,391	5,679,192
Wheat, centals.....	305,224	9,328,240
Barley, centals.....	33,160	5,928,073
Oats, centals.....	5,137	787,272
Corn, centals.....	6,071	109,347
Rye, centals.....	1,595	287,811
Beans, sacks.....	10,795	669,439
Potatoes, sacks.....	16,290	1,267,887
Onions, sacks.....	1,631	184,231
Hay, tons.....	2,104	127,697
Wool, bales.....	5,767	62,459
Hops, bales.....	..	8,879

## EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	25,560	3,880,146
Wheat, centals.....	197,479	8,648,455
Barley, centals.....	72	4,211,832
Oats, centals.....	816	48,433
Corn, centals.....	645	10,032
Beans, sacks.....	16	23,646
Hay, bales.....	..	14,400
Wool, pounds.....	321,523	866,854
Hops, pounds.....	2,230	501,244
Honey, cases.....	11	6,079
Potatoes, pack's.....	26	46,761

## California Dried Fruit at New York.

NEW YORK, May 7.—Evaporated apples, common, 7@8 1/2c; prime wire tray, 9@9 1/2c; choice, 9 1/2@10c; fancy, 10 1/2@11c. California Dried Fruits.—Market quiet, but values fairly steady, with offerings light. Prunes, 3 1/2@7c. Apricots, Royal, 10@13c; Moorpark, 11@14c. Peaches, unpeeled, 8 1/2@11c; peeled, 14@17c.

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## THE VETERINARIAN.

### The Schmidt Treatment for Milk Fever.

Dr. Chas. F. Dawson, Veterinarian of Florida Experiment Station, gives the following details of a disease and treatment which have already been mentioned in our columns: Parturient paralysis is a disease peculiar to the cow, and is known by several other names, viz: milk fever, calving fever, parturient collapse, parturient apoplexy, parturient fever. It is to be distinguished from true parturient fever or septic infection in the parturient state. It is quite common in dairy districts, and a fatal termination is not infrequent. It occurs oftenest in the graded, plethoric, stall-fed cow at, just before, or within a day or two after calving. Most dairymen are familiar with the symptoms. These first manifest themselves in a swaying, unsteady gait, dropping of the head, refusing the calf, stamping the feet and whisking the tail. These are followed by a partial paralysis in the hind quarters and the animal goes down, resting on her breast bone, with the head sleepily pointing to the right flank, or, if the case is a severe one, she will lie stretched out with head extended, though at times it may be raised and dashed back upon the ground. In some cases there is fever, in others, none. Although it is believed the disease is caused by heavy feeding prior to calving, it is not known that any particular feed, excepting the highly concentrated ones, predispose to it. Although the disease was formerly one of the most difficult for the veterinarian to treat, we now have a method which cures such a large percentage of cases that we claim specific powers for it.

A case in point: A large plethoric cow, best milker on the Station, breed uncertain, calved Sunday morning normally. Monday morning she was found down, in the hammock pasture. As it was raining heavily, it was decided to get her under cover. A sled was constructed, and she was placed upon it and dragged to the barn. The udder was washed with soap and water, milked out, and then bathed with a 5% solution of carbolic acid. Two drams

of the iodide of potassium were then dissolved in one pint of boiling water. The solution was allowed to cool to the body temperature and one-fourth of the solution was injected into each teat. During the day the animal showed signs of improvement. The next morning she was able to stand and get around some. On the third day she left the stall and grazed. The milk was discarded for a few days, but soon became normal in amount and quality.

Although some advise drenching with salts to clear the bowels, I can condemn the practice. In the case cited here, it was only by the timely injection of a strong stimulant hypodermically that the animal was aroused from collapse caused by an attempt to drench her. The safer plan is to give enemas of oil, glycerine, or soapy water, and to empty the bladder by catheter or by inserting the finger in the bladder tube.

In cases where the animal does not show signs of improvement in eight hours, the dose of iodide of potassium should be repeated. In every case the udder should be kneaded during the injection to aid in the dispersion of the medicine. The animal should be placed in a dry bed, covered with blankets, and allowed plenty of water as soon as she will drink.

The apparatus to apply the treatment (Schmidt's) consists simply of a 3-inch glass funnel, with 4 feet of 1/4-inch maroon or black rubber tubing attached, and carrying in its other end an ordinary milk tube. The apparatus should be boiled just before using, and is to be kept free of dust during the operation.

Nobody is wise all the time. The most prudent of us will occasionally eat under-ripe or over-ripe fruit in summer. We do not suffer long if Perry Davis' Painkiller is at hand to cure the cramps.

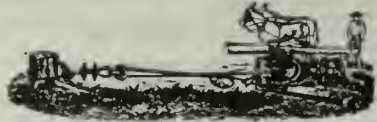


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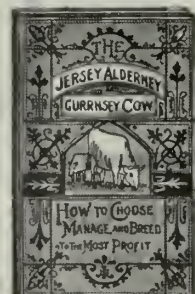
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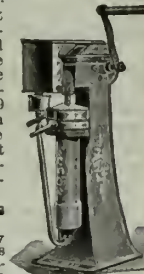
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## SHEEP AND WOOL.

### The Sheep and the Forest Reserves.

The annual meeting of the Tulare County Wool Growers' Association was recently held in Porterville. The following officers were elected: President, H. Zimmerman; vice-president, Clinton T. Brown; treasurer, J. Hardwig; secretary, Alex. S. Kramer. After the transaction of other business, the following preamble and resolutions were unanimously adopted:

WHEREAS, The Government has seen fit to exclude sheep from the California forest reserves, because of their alleged destructiveness to forest growth, as well as to the watershed of the mountain slopes, by reason of their eating out and destroying undergrowth, and because of the alleged destructive fires started by herders, whereby a great injustice has been done to a valuable industry; now, therefore, be it

Resolved, By the Tulare County Wool Growers' Association, that such allegations are false and that the Government has been misinformed; that its agents have consulted people prejudiced against sheep and have not sought information by personal examination of the forest, or by consulting people of unbiased minds who are well informed; that said fires have been started in the main by campers and tourists; that sheep do not destroy underbrush, as can be proven by comparing lands that have been pastured in the past four years with those not pastured, nor do they destroy forest growth; on the contrary, we claim they are a benefit if handled properly and in an intelligent way, by devouring the weeds and grasses that are the means of the rapid spread of fires, should one be started by some mischievous person.

Resolved, That by reason of the tropical climate of this part of California, the mountains have nearly recovered their former density of undergrowth, yet there is no perceptible increase of water flow, nor is the snow retained longer.

Resolved, That the pasturing of cattle, horses and hogs is more destructive and more of a nuisance, by reason of their encroaching upon places of public resort and standing in and polluting the water of the streams.

Resolved, That sheep do not stand in nor pollute the water of the streams.

Resolved, That the sheep men be allowed the same grazing privileges in the California reserves that are now allowed in the Rainier and Washington reserves.

Resolved, That the Department of the Interior be asked to send a special agent to inspect the forest reserve in this part of California, with the view of determining whether or not sheep do injure forest growth; or whether such injury, if done, is not more from fire than sheep; and that this Association will guide and convey, at its own expense, such agent to any part of the mountain forest he may desire to go, and that such inspection should be made in the month of July.

Resolved, That we deplore the influence surrounding the President, which caused him in his message to Congress to especially mention sheep as being more destructive to forest growth than other domestic animals.

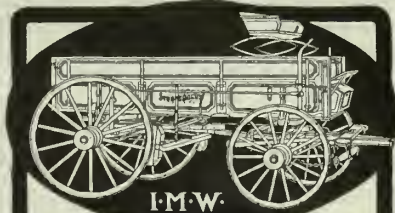
Resolved, That this Association

humbly asks the support of all agricultural and horticultural associations and all honest, right-thinking men, to the end that a valuable industry may not be driven out of the county by reason of not having grazing privileges in the forest reserve.

Resolved, That our Congressmen and Senators are hereby petitioned to take such steps as may be necessary to modify the laws, with a view of allowing sheep to be pastured upon the forest reserves of California, in such numbers and under such restrictions and regulations as may seem best for a valuable industry and the commonwealth; that the Government is inconsistent in making one set of grazing laws for Oregon, another set for Arizona and still another for California.

Resolved, That this Association will agree to bind its members to a strict observance of grazing regulations, should permits be granted to graze sheep upon the California forest reserves.

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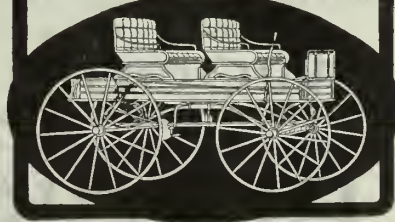
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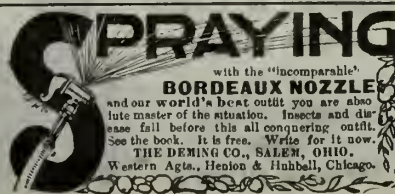


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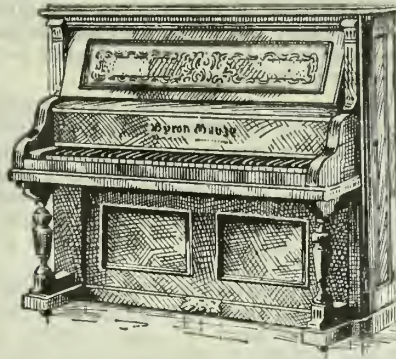


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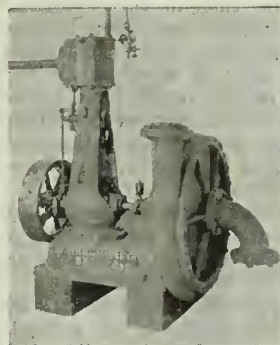
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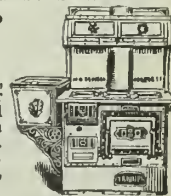
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- XI. Planting Trees and Vines.
- XII. Pruning Orchard Trees and Thinning Fruit.
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TO THE EDITOR:—I take pleasure in sending you for publication a circular prepared by Mrs. D. T. Fowler of the Women's Work Committee of the California State Grange. We hope you will lend a hand in advancing this important work of our organization.

CHARLES W. EMERY,  
W. M. Cal. State Grange.  
Oakland, Cal.

#### IMPROVEMENT OF PUBLIC SCHOOL GROUNDS.

Your committee believe that the improving and beautifying of the grounds and approaches of the public school buildings of our State will appeal not alone to the Patrons of Husbandry but to the communities at large. Ruskin said that whatsoever women as a whole united upon doing would surely be done, then let all the Grange sisters unite in this work of promoting the improvement of school grounds, thereby conferring blessings upon generations of children and teachers directly, as well as upon whole communities, indirectly, where such improvements are made, for grounds studded with beautiful trees are a joy to all who look upon them.

There are few if any of our school yards in which trees can not be grown with proper care, and at small expense.

Let our school yards be no longer dreary wastes, affording neither shade from the sun nor shelter from the winds, "Where the house walls seem blistering in the sun without a tree or vine to cast the tremulous shadow of its leaves across the \* \* \* windows," but instead let them team with an arboreal vegetation, which will ever exert so beneficial an influence upon the mind and health of the children as will more than compensate for the labor and expense of their planting and care.

It has been conceded by many writers of prose and verse that trees exert an important influence in the development of the higher qualities of the mind, but we all can testify to their influence in promoting physical comfort and quiet satisfaction.

Strong contrasts are effective object lessons.

Compare the Oroville public school yard, where its boundaries are outlined with double rows of orange trees, whose vivid green leaves and golden fruit cannot fail to arouse a love of the beautiful in the minds of the children who play in their shade; with the yard of the public school where there is not a vestige of verdure for the eye to rest upon. How the beauty of the former arouses the beholder's admiration and joy, and how the latter depresses his spirits with its dull dreariness.

Let us develop and lead the public sentiment to plant our school grounds with ornamental and fruit trees of such varieties as soil and climatic conditions may best determine.

Among fruit and nut bearing trees the orange, olive, almond and walnut have most desirable qualities to commend. The ornamental trees are legion.

In many localities nurserymen will willingly contribute the young trees necessary for this work.

The Grange members will find willing co-operators in the teachers and pupils and by this united effort such a public sentiment will be aroused as will easily

carry this work on to a successful fruition.

So your committee urge the Grange sisters to use their best efforts in the carrying out of this work to the end that none of the rural school yards of this State be any longer blots upon the landscape, but instead all be oases of beauty.

#### Tulare Grange.

TO THE EDITOR:—After the reading and approval of the minutes, and after an excellent lunch, the first and second degrees were, in an impressive manner, conferred on a class of five.

GRAZING.—At the call for reports from special committees the committee appointed at the last previous meeting to report on the question drawn from the question box, "Shall the Government rent its unsold land for grazing purposes, and how?" made this report:

We have carefully studied the question and find that free grazing of the public land has, in nearly every instance, led to overgrazing, and overgrazing has been destructive of the grasses and cover of the range and thereby destructive of the range itself. We find free range frequently leads to unseemly contests for its occupancy, often to bloodshed, outlawry and murder.

We find under a free range system that no occupant will consider its preservation; that it would only stimulate others to drive their herds onto the range preserved and get the benefit of his care, because where no rental is paid for the use of a range every stockman considers he has an equal right with every other stockman to its free use, and he will, naturally, drive his stock to where the best grazing is.

We find where care is taken and the land is grazed judiciously no injury is done to the range and more stock can be kept, and this is invariably the result where the land is owned.

We are informed the Government is now experimenting in the restoration of the public range destroyed by overgrazing. We doubt the practicability of doing this until all stock is prohibited from grazing on it for a period, and then only under proper conditions.

Seeing, then, the free use of the public range has been its destruction, we believe the policy of the Government in this respect has been bad and should be changed, and that no grazing on public lands should be permitted except under such regulations as will in the future prevent overgrazing, and will require the payment of a rental equal to the grazing capacity of the land rented.

We believe, then, the unsold lands of the Government should be rented for grazing purposes in such a judicious way as will not prevent its being taken for homesteads, when required therefor, and will tend to restore it to its original condition, in such bodies as will best serve public interests and at such a rental as its grazing value will justify.

We believe this to be the true way to restore the public range to its best possibilities and greatest usefulness, and that a reasonable rental charge for its use is in the interest of the community and of the stock owner renting it.

We believe no preference should be given to any class of stock on the public range.—John Tuohy, R. B. Holcomb, M. A. Williams, Committee.

OTHER QUESTIONS.—The subject for the day was then taken up, "The value of a good education." The Lecturer read the comments of the National Grange Lecturer, and Sisters Weaver and Eckels read well-written papers on the subject.

The following questions were drawn from the question box:

1. Has there been a sufficient supply of irrigation water in this (Tulare) irrigation district this season?  
2. In what way can our present system of farming be improved, and what new crops can be successfully cultivated here?

3. Can anyone give a receipt for preserving eggs?

These subjects were discussed beyond the time limit allowed, when the Lec-

turer announced the subject for the next meeting, "That the present tendency of the United States towards centralization in government should be resisted." A committee of four was appointed to discuss it.

The thanks of the Grange were voted to Mr. D. K. Zumwalt for the use of his grounds for the Grange picnic.

J. T.

#### More Fine Stock for California.

Barnhart Co. of Suisun, Cal., have just received from Kansas City, Mo., twenty-four head of registered Short-horn bulls for their own use and improving cattle in Solano county. These bulls have been purchased at high prices from the best breeders in the State of Missouri, and the Barnhart Co. have been at great expense to get these high-class cattle here in good condition.

P. H. Murphy of Perkins, Sacramento county, has just purchased a foundation herd of Poland-Chinas from the best breeders in the Eastern States. The hogs are sired by the great sweepstakes boars Perfect I Know, 19172, Proud Perfection, 23799, Mo's Black Chief, 19399, Knoxall Wilkes, 46219, and from Ideal Sunshine sows. This makes the greatest combination of the leading strains of the breed. Many pigs are now coming from them that show up splendidly.

1. 80 acres, Placer Co., Calif., \$800.
  2. 160 acres, Placer and Nevada Cos., \$1600.
  3. 608 acres, Nevada Co., adjoining No. 2, \$7,280.
  4. 120 acres, Nevada Co., near Nos. 2 and 3, \$1200.
- All the above tracts are well wooded and watered: is a deep red soil suitable for fruit, and is in the thermal belt. R. R. station within 3 miles of each tract.
5. 300 acres, Solano Co., Calif., \$9000. Fenced. Adobe farming land. 3 miles from Sacramento river landing.
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80 acres in walnuts, olives, lemons, oranges and apricots in full bearing.  
Perpetual water right.  
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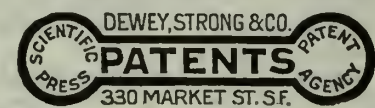
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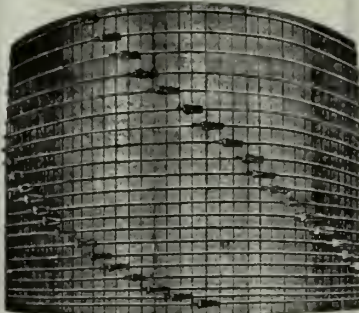


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Costs no more, is easier to set up and is far superior to the old style flat-hoop tanks for any purpose. They need no water channels or perishable devices for keeping the staves wet. They are always tight. The hoops are of steel and tighten with a monkey wrench. They have an upset thread end 6 inches long. Each hoop has from 2 to 6 lugs or shoes, according to size of tank. Send for price list of stock sizes.

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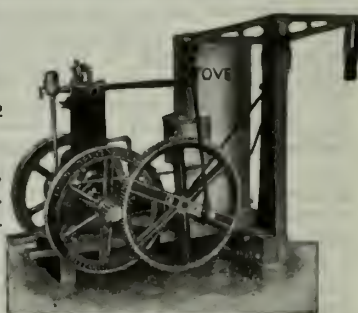
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Pasteur Blackleg Vaccine ready for use.

Single Blacklegine (for common stock): No. 1 (10 doses) \$1.50; No. 2 (20 doses) \$2.50; No. 3 (50 doses) \$6.00. Double Blacklegine (for choice stock) \$2.00 for 10 doses, first lymph and second lymph inclusive. Blacklegine Outfit, for applying Blacklegine, 50 cents.

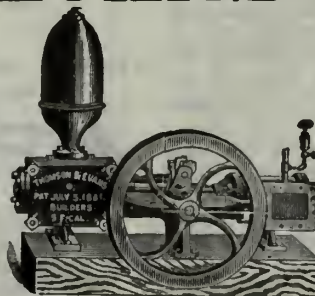
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by local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of Deafness (caused by catarrh) that cannot be cured by Hall's Catarrh Cure. Send for circulars, free.

F. J. CHENEY & CO., Toledo, O.  
Sold by Druggists, 75c.  
Hall's Family Pills are the best.



## Farmers' National Congress.

To THE EDITOR:—It is quite probable that farmers generally do not fully realize the scope and extent of the Farmers' National Congress, as otherwise they would take a much deeper interest in it. The topics discussed are more particularly those of a national or international character, quite different from what is generally on the programmes at farmers' institutes. The following is a copy of the programme for the 1902 meeting:

1. Inter-oceanic canal; 2. National irrigation; 3. Reciprocity—how may it affect agricultural interests? 4. Effect of present insular possessions on the agriculture of the United States; 5. Preservation of forest and fruit trees and reforestation; 6. Injurious insects, insect pests and fungi; 7. What part of a man's farm does he sell when he sells the crop? 8. Postal reforms particularly affecting the farmer; 9. Mutual relations of Northern and Southern farmers; 10. Dairy interests of the United States as related to the markets of the world; 11. Farm products other than dairy products in the markets of the world; 12. The labor problem from the farmer's standpoint; 13. How can we best build up our merchant marine?

The Farmers' National Congress is made up of delegates and associate delegates appointed by the Governors of each State. Every Governor appoints as many delegates as the State has representatives in both houses of Congress, and as many associate delegates as he chooses.

The meeting will be held at Macon, Ga., Oct. 7-10, and the people of that city will give a hearty welcome to all who attend.

The Southeastern Passenger Association has granted a rate of one fare for round trip; and there is a fair indication that the other passenger associations will make better than an excursion rate.

The men who will be invited to take part in the programme will be the choicest that can be selected, and each one will be an acknowledged leader in his line. Isn't it about time the farmers took a practical hand in helping to solve the problems that pertain to their own affairs?

We hope to have at least 1000 delegates, associate delegates and visitors. John M. Stahl, 4328 Langley Ave., Chicago, is secretary, and will gladly answer any correspondence for the Congress.

J. H. REYNOLDS, Treasurer.  
Adrian, Mich.

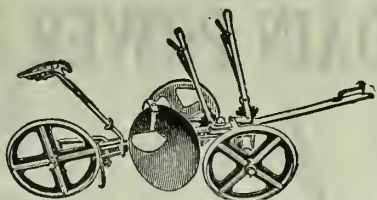
## New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR WEEK ENDING APRIL 22, 1902.

698,386.—TELEPHONE SYSTEM—A. K. Andriano, S. F.  
698,168.—WINDOW SASH—P. Barnum, S. F.  
698,244.—COMPENSATING MOTORS—F. G. Baum, Stanford University, Cal.  
698,245.—COMPENSATING MOTORS—F. G. Baum, Stanford University, Cal.  
698,359.—PULLEY HANGER—J. W. Berry, Tacoma, Wash.  
698,250.—RAIL BOND—G. B. Blanchard, Tacoma, Wash.  
698,251.—RAIL BOND—G. B. Blanchard, Tacoma, Wash.  
698,361.—OIL BURNER—W. Booth, S. F.  
698,353.—MOVING BOULDERS—P. Bouery, Weaver, Cal.  
698,105.—GOLD SAVING DEVICE—L. D. Craig, S. F.  
698,378.—STAMP STEM GUIDE—D. C. Demarest, Angels Camp, Cal.  
698,278.—LAMP HANGER—H. J. Harrison, Juneau, Alaska.  
698,016.—CYANIDE TANK—J. J. Hervey, Randsburg, Cal.  
698,280.—MATRIX BAND RETAINER—A. J. Hiniker, S. F.  
698,288.—WRENCH—L. W. Johnson, Jerome, Ariz.  
698,312.—STOVE FIRE BOX—J. P. Neeley, Centralia, Wash.  
698,134.—DRYING LUMBER—H. B. Phillips, Berkeley, Cal.  
698,052.—DOOR GUIDE—W. N. G. Place, Seattle, Wash.  
698,142.—BUTTONHOLE CUTTER—C. L. Rogers, Seattle, Wash.  
698,227.—SHELF HOOK—C. A. Schrader, San Diego, Cal.  
698,067.—BASKET PACKER—F. H. Smith, Wrights, Cal.  
698,081.—PLOW—W. Turner, Paso Robles, Cal.

**WIRE Cattle Poultry Hog FENCE**  
Strongest and best Field Fence on the market.  
WEST COAST WIRE & IRON WORKS,  
17-19 Fremont Street, San Francisco, Cal.



The new Benicia-Hancock disc plow put out during the past season proved to be an unqualified success. In view of past failures on the part of Eastern manufacturers, the Benicia Agricultural Works may feel proud of their product. More were sold than anticipated, for the public had begun to think that the disc did not make a good plow. It is safe to assert that no disc plow can be a success unless made under the Hancock patents, which have just been sustained in an injunction suit brought against an imitator. Baker & Hamilton have established agencies over the greater part of several States. Write them at San Francisco, Cal., for particulars.

## Breeders' Directory.

## HORSES AND CATTLE.

**HOLSTEINS**—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except 1st on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. F. H. Burke, 30 Montgomery St., S. F.

**A. J. C. C. JERSEYS.** Service bulls of noted strains Joseph Maillard, San Geronimo, Marin Co., Cal.

**26 SHORT-HORNED DURHAM BULLS FOR SALE.** Also 25 grade Durham cows. Also 1 imported French draft stallion; color black, weight 1650 lbs. Address E. S. Driver, Antelope, Cal.

**JERSEYS, HOLSTEINS & DURHAMS.** Bred specially for use in Dairy. Thoroughbred Hogs, Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

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**SANTA TERESA POULTRY FARM,** Eden Vale, Santa Clara Co., Cal. Illustrated catalogue with show record, free. Agents Eclipse Aluminum Leg Bands; sample 2 cts.

**WILLIAM NILES & CO.,** Los Angeles, Cal. Nearly all varieties chickens, geese, ducks, peafowl, etc.

**MEAT MEAL.**—Best quality, lowest price. White Leghorn eggs. A. Warren Robinson, Napa, Cal.

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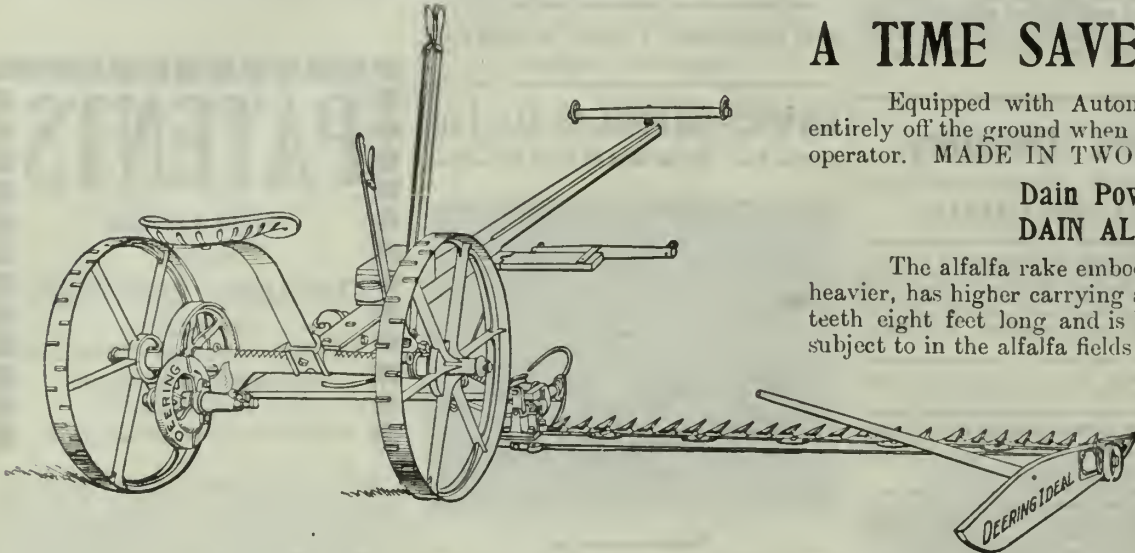
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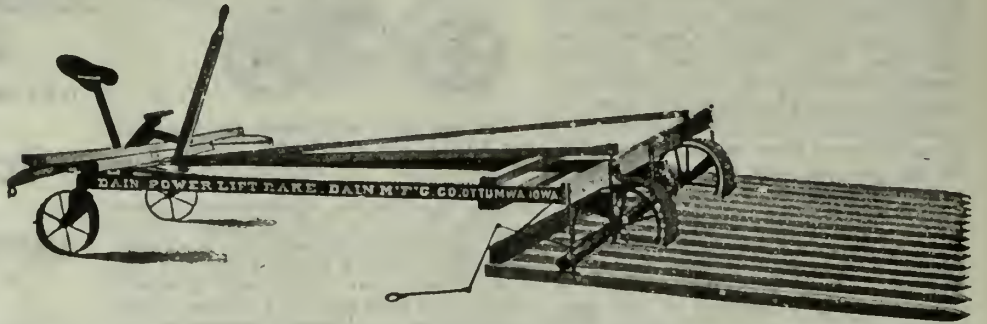
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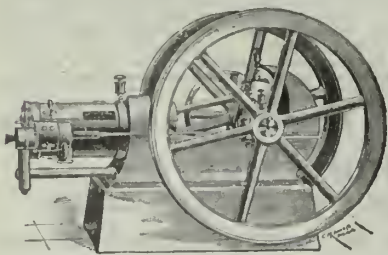


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# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 20.

SAN FRANCISCO, SATURDAY, MAY 17, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

### Butterflies.

The time of the greatest abundance of butterflies is approaching, and it may please our younger readers to have a glance at some of their forms as classified by the entomologist. The plates on this page, which are from a Nature Study bulletin by Prof. C. W. Woodworth of the State University, give pictures of forty of the commoner species, which will include the ones most likely to come under the hats of

Nymphalidæ, is a very important family, mostly of large butterflies, and is considered the most highly developed of the series. All these butterflies are characterized by having the first pair of legs drawn up and not used in walking. Make the butterfly walk a little and see if the first pair of legs is held up near the body. There are many sub-families of the Nymphalidæ, and the different figures show their forms, but the names used with the figures are those of the insect themselves and not of families.

sub-family includes the Papilio, which is the typical swallowtail butterfly—one of the species being shown on the plate. These showy butterflies are seldom of much industrial account, for their larvæ feed chiefly on wild plants, though sometimes they appear on garden plants.

The last family is the Hesperidæ. They are heavy-bodied butterflies, often called "skippers," and are distinguishable by the fact that they have very wide heads and antennæ far apart. It is a large family,



Forty Common Butterflies Grouped in Families and Given Their Proper Names.

our boy readers. By looking closely at the captive and comparing it with the pictures, it will be possible to ascertain in many cases what its exact name is, and this will be a great satisfaction. The publication from which we take the plates is quite full in its information, as it includes the names and descriptions of about all the butterflies found in California, and it gives the points by which their identification can be made. It is intended to facilitate nature study in the schools and to serve pupils a means of naming their collections. It can be had for a dime from the Students' Co-operative Society of the University at Berkeley.

Returning to the plates on this page, the reader will notice certain large lettering. These names are those of families of butterflies. The first named, the

The next family, near the bottom of the first plate, is the Lycaenidæ. They include the "hair streaks," the "coppers" and the "blues." They are often abundant and can, we think, be easily determined as to the group by reference to the pictures.

The first family on the second plate is the Papilionidæ, which has two quite different sub-families. The first has no tails on the lower parts of the wings, these extensions being quite characteristic of the second. The first includes the well known and often very abundant cabbage butterfly, and this and others of its groups are called the "whites," while the second group of similar form are called "yellows." The larvæ of the former feed largely on the cabbage and mustard group of plants, while the "yellows" have a general liking for leguminous plants. The second

but the members occupy themselves chiefly with wild plants and weeds. This family of butterflies is held to be the lowest of this division of the lepidoptera and nearest to the other division which includes the moths. This is judged by their entomological anatomy. The agriculturist would also agree to this division from another point of view. The moths are infinitely worse in their depredations upon cultivated plants, and this should characterize them a degenerate race. The butterflies are as a rule beautiful, and evil doing does not mar their beauty to any great extent, except in the case of the pieris or cabbage butterfly, whose worms do harm enough to characterize them as the reprobates of the butterfly class. It will be noticed that all the antennæ in the pictures have knobs at their ends; moths do not.



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E. J. WICKSON. Horticultural Editor

San Francisco, May 17, 1902.

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## The Week.

Again there has come a May rain, and this time of unusual magnitude, for it has reached nearly all parts of the State and has been quite heavy here and there. It is likely that much hay will be hurt and that in some localities berries and cherries will be injured; but the refreshing effect upon grain and pasturage will be notable. There has been much complaint of late from the interior that the grain was not developing as expected, because of the drying out of the ground and that the subsoil was very dry. It is probable that these showers may carry along the plants until they get sap enough in the stem to fill the head, and thus add considerably to the crop. There is, however, more danger now that the crop will be overestimated, rather than made too small. This is also true of fruit, and there is much just complaint that the prospects of the fruit crop are being too generously forecast, to the detriment of values. This should be guarded against. The development idea may be leading people to put too large estimates on outputs. It should not be forgotten that this arrangement sinks prices in the same ratio.

Wheat values have moved upward during the week, both for spot and futures, from 25c to 50c per ton, but trading has been almost wholly speculative. Not a single wheat cargo has cleared. Barley is higher for options and strong at last quoted rates for the spot article. A shipment of 1400 tons went forward by sailing vessel for Australia. Oats are being held a little more firmly, particularly white descriptions, with fair inquiry and stocks not very large. Corn is slightly higher for the Large Yellow variety and steady for the other kinds. Beans are again quiet, the last advance having scared off buyers. Ground feed of all descriptions is without change as to price, but movement is very light. Hay market is slow and lacking in firmness. Prices for beef, mutton and hogs have been inclining downward, but the drop has not been very marked. Butter values are ruling steady under speculative buying. Cheese quotations here have been reduced for new, but market East is quite firm. Eggs are in less active request and market is easier without being materially lower. Poultry has not been selling to good advantage as a whole. Large and fat young roosters proved an exception. Potato market was easier for old, but new met with a good market, the quality showing improvement. Old onions, other than Australian, are about out of market. New are in fair supply and cheap, but quality up to date is not very fine. Peas and asparagus are going to canners at about same figures as last week. Cherries and straw-

berries are arriving freely and prices have taken a decided tumble. A few Pringle apricots arrived from Arizona and a few gooseberries from San Leandro. Neither oranges, lemons nor limes are receiving much attention at present. Nothing particularly new in the dried fruit line. Apples are the scarcest and highest on the list and prunes the most plentiful and cheapest. There is a little trading in wool at generally unchanged figures. A steamer sailing Tuesday took 375,000 pounds of grease wool for New York. The same vessel carried 50,000 pounds of hops for the same destination.

Tobacco experiments in California continue and are of interest. The latest arrangement is to grow the plant under canvas and thus equalize temperature and rule out direct sunshine and wind. This plan is now being tried in the Connecticut valley with the idea of producing the highest priced Sumatra and other cigar wrapper tobaccos, and the returns are reported to have warranted the large investment required to roof land by the acre. The Santa Rosa Democrat says that at Hermitage, about 12 miles from Cloverdale, a company is now planting nine acres of Sumatra and Havana blend tobaccos, and canvas is stretched across the entire nine acres on poles and cross pieces about 10 feet from the ground. Beneath this canvas tent the plants will be nurtured in a temperature as near uniform as possible, sheltered from the hot rays of the sun by day and tempered against the cool breezes of night. The plants are set out about 5000 to the acre and the soil there is said to be peculiarly adapted to their growth and development. Canvas will be used to cover every patch.

It is reported that Secretary Wilson is to visit the extreme Northwest this summer—covering the ground he was obliged to omit last year because of the illness of Mrs. McKinley. The Secretary proposes to go to Alaska to see the progress there in agriculture, especially the farms of John Nicolai and Henry Clarke, who are said to be making a success of the largest farm in Alaska. It consists of forty acres, thirty-five acres at Dyaa and five at Skaguay. Their crops include vegetables of all kinds, oats, berries, apples and crab apples. The experiments show the yields from the Alaskan soil to be very large and the quality of the vegetables excellent. The entire product is sold at White Horse, Atlin and other interior towns, bringing high prices. This year the larger part of the territory tributary to the Skaguay & White Pass Railroad can be supplied.

We notice that we are being credited in the city dailies with having discovered a great cure for the canker worm, and our well-informed readers will smile when they read that we advocate spraying with Paris green one pound to 100 gallons of water in the latter part of November. To those who may not have given much attention to the subject we may suggest that we told the reporter that the Paris spray must be used in the spring as soon as the worms began to work, and that it was no use to spray in the fall, but the wingless moth might be caught in other ways.

Beet planting at the Chino factory was finished last week and 10,600 acres are in beets. The Champion says that present appearances lead the factory management to believe that the crop is safe, and preparations are being made for a 100,000-ton campaign. No irrigation has been resorted to for beets contracted to this factory, and it is not anticipated that there will be. This shows well for moisture conditions in that region.

It is interesting to note that during the last winter about 1000 acres of denuded lands in the San Gabriel reservation have been replanted with pine seed and with the seeds of other trees suitable for mountain growth. In this effort to replace the forests swept away by fires the foresters are dependent upon the moisture due to the winter rains. It is hoped that a good portion of the seedlings will survive the hot season and be duly established.

The first cherries to reach the East have done unusually well this year. The first box weighed ten pounds and it sold for \$23 to a fancy fruit dealer of Philadelphia. It is said to be the highest price ever paid for a box of California cherries.

## QUERIES AND REPLIES.

### Loss of Young Prune Trees.

TO THE EDITOR:—About 250 out of 2500 of our Petite and Imperial prune trees have died from the ground up. They range from two to four years old, are on peach root and planted on dry red bench land. I could not detect anything wrong until the sap came up, then they began to turn black and sour, so we split the bark. They finally died all around the body and we sawed them off at the ground. They are most all sprouting above the graft.

Orchards on upland seem to have died more this year than on bottom soil. The trees have never been shaded. We think it must be sunburn, as last summer was extremely hot. The trees made a growth from 2 to 6 feet last year. We left some that were only dead on the south side, which seem to be doing very well as yet.

We would like your opinion of what caused them to die in that way, and also a preventive. If they need shading would wrapping with sacks or painting with whale oil soap and whitening be sufficient? We have some apple trees which we shade with shakes, but that comes expensive. Would something cheaper be sufficient?—READER, Sonoma county.

It is not usual for trees to be affected by sunburn in the way you state and sunburn, although serious enough in some cases to render a young tree worthless, does not appear on the shady side. So far as sunburn is concerned it can be entirely prevented by keeping the bark white with the whitewash which you describe. Sometimes the upper part of the tree is injured and the sap turned sour by the occurrence of freezing temperatures after the sap has started. This is commonly called "sour sap in the top," and in such a case the roots may be in good condition and send up shoots such as you describe. Is it possible that you have some trees injured in that way and some perhaps by sunburn? If you can get a good shoot from below you can make a very serviceable tree from it. Sometimes trees on the uplands are rather more affected by sour sap in the top than on the lowlands, because the spring heat is greater and the trees start growth too early. It is difficult to form a definite opinion as to the cause of the trouble without direct study of the trees affected. We suppose you are sure that you have no San Jose scale, as that is a very inconspicuous insect and sometimes destroys trees before growers become aware of its presence.

### English Walnuts.

TO THE EDITOR:—What kind of soil is best for English walnuts? Under what climatic conditions do they do the best? Do they do well under irrigation? How far apart should they be planted to obtain best results? Can you recommend any part of the State where they do well? Will it throw the trees back to plant potatoes or berries between trees?—READER, Stockton.

The English walnut thrives best in the deep, well-drained soil, in which it can find 10 to 15 feet of clear soil before standing water is reached. The largest production at present is in the coast region of southern California in Santa Barbara, Ventura, Los Angeles and Orange counties. In this region the heat is somewhat modified by nearness to the coast, but by selecting the French varieties of walnuts, which are somewhat more hardy than those grown in southern California, you can get productive trees on suitable soils in the San Joaquin and Sacramento valleys. The tree does well with irrigation where the soil moisture requires it; in fact, irrigation is necessary under these conditions. There are, however, very productive and satisfactory trees in valley regions of good rainfall where irrigation is not necessary. The French varieties make rather smaller trees and may be satisfactory about 30 feet apart, although where the large seedlings are grown, as in southern California, a distance of 40 feet is often used. Crops can be grown between English walnut trees without injury to the trees for the first few years, providing the soil is rich and deep and the moisture is sufficient to supply both the trees and the crop. This practice, of course, is safer where irrigation is available.

### Brown Apricot Scale.

TO THE EDITOR:—I find many prune trees affected as per inclosed twig. Will you let me know if it is San Jose or pernicious scale and what in your judgment is the best summer wash?—SUBSCRIBER, Sonoma county.

The prune twigs which you send are not affected



with San Jose scale, but with a rather more serious one known as the, "Brown Apricot scale," which also affects prune trees quite as seriously as apricots. It is very difficult to kill because the lime, salt and sulphur wash, which is so satisfactory for the San Jose scale, when applied in the winter time, does not destroy the scale which you have. It has its eggs carefully sealed down during the winter so that they cannot be reached by this spray. The most satisfactory treatment for it is the application of kerosene emulsion in June, in your section, for by that time the eggs will be hatched out and the young scales running about on the leaves and twigs. It is, of course, difficult to spray in the summer time because the leaves protect many of the insects, but the effort has to be made, using a Cyclone nozzle so as to shoot the spray up under the foliage as thoroughly as possible. The kerosene emulsion properly made does not injure the leaves, nor the fruit.

#### Flea Beetles in the Garden.

TO THE EDITOR:—Can you give me any information upon the following question: I have potatoes planted and am much troubled to know the cause of having the leaves of the vines punctured. It appears that the eating of the leaves is done at night time. The holes eaten in the leaves are small, each leaf being full of them. I may further state that whatever is the cause of this has also destroyed other plants, such as beans, cabbage and cauliflower plants. Can you prescribe a remedy for this?—GROWER, San Francisco.

The enemy which is working in your garden is in all probability a flea beetle, a very minute insect, not much larger than an ordinary flea, and quite as skillful in getting out of sight. If you will quickly put a piece of white paper under a plant which is affected, you will likely find the little insects jumping on and off from it. They are so inconspicuous and move so quickly when the plant is disturbed that they are very hard to detect, and plants often get into very serious condition before one knows what the trouble is. There are leaf eaters like slugs or snails which work in the night time, but they do not make the peculiar, small holes which are characteristic of the flea beetle. The best treatment is to spray the plants with Paris green—one-half ounce of Paris green to five gallons of water, keeping it thoroughly stirred during the spraying, so that the poison may be evenly distributed.

#### Wood Ashes for Woolly Aphis.

TO THE EDITOR:—I have been told that wood ashes placed around the roots of apple trees will kill the woolly aphis. Please let me know if it will do so, and, if so, what amount should be applied around a tree that is three years old. I should be afraid that too much might kill the tree.—GROWER, Watsonville.

The application of wood ashes upon the roots of apple trees reduces very considerably the insects on the roots and prevents them from accumulating about the root crown, where they do the most injury. There will still, however, be a necessity of fighting them on the branches of the trees with kerosene emulsion or other summer sprays. In our own experience we know that the number upon the upper part of the tree is very much reduced by the use of ashes around the roots. We have used as much as a five-gallon oil can of fresh wood ashes around the base of each tree. The application should be made at the beginning or during the rainy season, so that the water may reach the lye from the ashes and carry it down to the destruction of the insect. We know that this amount of ashes is not injurious to a good-sized tree, with the stem, say, 8 or 10 inches in diameter; but we would not use quite as much around a young tree.

#### Dropping Pears.

TO THE EDITOR:—My pears have nearly all dropped off, which I think is caused by the sulphur smoke from the smelter at Keswick. I send you herewith some of the fruit. Please tell me what is the matter, also the cause and cure?—ORCHARDIST, Redding.

Your young pears are affected by the scab, which is a fungus disease which can be largely prevented by spraying the trees with lime, salt and sulphur during the winter time. This disease, however, would not ordinarily account for the falling of the young fruit. Pears drop very badly from lack of fertilization of the blossom. This would seem to be the case with your fruit, because if you make a cross section of the little pear and examine it closely with a magnifying glass you will see that no good seeds

are forming. There are merely the shells with no germ contents. It would be impossible to tell by an examination of these specimens whether the sulphur smoke had anything to do with their dropping. There is, however, scab enough present on these specimens to make the fruit worthless even if it had stayed upon the twig.

#### Root Knot.

TO THE EDITOR:—If black knots and surface roots appear on fruit trees, is there any danger in removing them at this time of year? And what are the causes of the black knot on the roots, more so on the almonds than the other trees?—SUBSCRIBER, Kingsburg.

There is no danger. The cause of root knot is a low parasitic fungus growth known as a "slime mold." The removal of the knot and painting the scar with Bordeaux mixture checks the growth at that spot, though it may appear elsewhere, and stated examination should be made to prevent the knots from becoming excessively large and cutting off the sap from the upper part of the tree.

#### Blight Only on Bearing Pear Branches.

TO THE EDITOR:—Enclosed find samples of pear leaves affected with blight. What is the cause, and is there any remedy? You will notice on some of the leaves a black dust, which appears to have been deposited by some insect. This blight has nearly ruined the crop for this year. It only affects trees with fruit on; trees or limbs not having fruit are entirely healthy.—L. W. LEAK, Auburn.

We have fully given what is known of this blight in earlier issues and have stated that no adequate remedy is known. The bacteria which cause the trouble are within the tissues and can not be reached by external application, nor has it ever been shown that any effective germicide can be carried in the sap. The interest in our correspondent's note is its support of the Selma observations in last week's issue. The blossom route seems to be the chief avenue of the pest to the tree.

#### Overflowed Grape Land.

TO THE EDITOR:—Would a vineyard of wine grapes do well on a piece of rich sediment land which is inundated for, say two to four weeks, early in the spring?—SUBSCRIBER, Healdsburg.

The grape will endure the saturation of the soil for that length of time or longer if it comes during the dormant season of the vine. If it comes after the spring heat has started the vine it would be more injurious; in fact might destroy the vines. Other than this danger and the likelihood of late frosts in low places there is no objection we know of to growing grapes except that high quality of wine could hardly be expected; the outlook would be for large vines, large grapes and plenty of them.

#### For Cottony Cushion Scale.

TO THE EDITOR:—I have an orange tree that is covered with cottony cushion scale. Can you tell me where I can get the ladybug which kills them?—C. M. SCHEIBEL, Santa Rosa.

To answer your request, and that of several others recently, we repeat what we announced some time ago, that all requests for colonies of beneficial insects should be addressed to Alexander Crow, entomologist of the State Board of Horticulture, Clay street dock, San Francisco. Mr. Crow has a breeding establishment, from which colonies are taken.

#### Capons.

TO THE EDITOR:—Is there a market established in San Francisco for the sale of capons, and, if so, how does the price range?—SUBSCRIBER, Healdsburg.

San Francisco market men say there is no lack of sale at \$10 to \$18 per dozen and upward perhaps, for it is not unusual for a choice capon to retail at \$4 at one of our swell city markets.

Those olive dyeing picklers in Los Angeles, to whose nefarious enterprise we alluded recently, have demurred to the action against them and proposed to escape penalty if possible. The complaint sworn to by the fruit inspector, charging them with artificially coloring green olives with aniline dye to imitate ripe fruit, and thereby imposing upon the dealers to whom they sold the product and the consumers who purchased it. In their demurrer the defendants allege that the coloring is harmless, and that the act of so coloring the olives does not constitute a public offense. Even if the court should thus hold we trust that the dyers have secured as much of evil repute as they desire and are willing to quit the imposition forthwith.

## WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 12, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

#### SACRAMENTO VALLEY.

Warm weather, with light rain at the beginning of the week, benefited all crops. Hay cutting has commenced and a heavy crop is being harvested. Winter wheat is in excellent condition. Oats, barley and early-sown wheat were never better at this season, and heavy crops are expected in all sections. Green feed is abundant and of excellent quality. Cherries and strawberries of superior quality are plentiful at Red Bluff. The first carload of cherries was shipped east from Vacaville in express refrigerators Saturday. Fruit thinning is progressing slowly, owing to scarcity of labor. Prospects continue good for heavy crops of all deciduous fruits. Oranges are in good condition.

#### COAST AND BAY SECTIONS.

Nearly normal temperature has prevailed during the week. Light rain fell in the central and northern sections Monday and Tuesday. Grain and hay continue in excellent condition, except in San Benito county and adjacent districts, where these crops are backward and will probably be very light. Haying continues, and in most places a good crop, excellent in quality, is being harvested. The sugar beet crop is well advanced and bean planting is progressing in San Luis Obispo county. A large acreage of corn is being planted in Sonoma county. Hops are making vigorous growth. Three special reports on the prune crop have been received from Sonoma county; the report from Santa Rosa says the yield will be much better than estimated last week, probably two-thirds of an average crop; from Fulton the report reads: "All prunes in this vicinity suddenly began to turn yellow this week, and growers expect only one-fourth of a crop." At Peachland, "the prune crop will be very short." Prunes are dropping in San Benito county. Other deciduous fruits are reported in excellent condition.

#### SAN JOAQUIN VALLEY.

Clear, warm weather has prevailed during the week, with cool nights and no rain. Light frosts damaged potatoes in the vicinity of Stockton. Grain has made fair growth, but is needing rain badly; reports from Fresno and Tulare counties state that the crop will be very short, owing to lack of rain early in the season, and in some places the grain will not even make good hay. Barley is heading out at Del Ray, and grain is ripening at Madera. All grains are reported as filling out very well in Stanislaus county, and a good yield is probable. Green feed is still abundant in most places. Haying is progressing. Deciduous fruit prospects are excellent in nearly all sections, though there are reports of apricots and peaches dropping in some places. Orchards and vineyards are being liberally irrigated.

#### SOUTHERN CALIFORNIA.

Warm, clear weather during the week has been very beneficial to deciduous fruits, which are advancing rapidly and give indications of a good yield. Orange and lemon trees are heavily laden with blossoms. Walnuts are reported lighter than last season. Early-sown grain is being cut for hay in many places, and, unless rain comes very soon, the crop will be nearly a failure; late grain is in better condition, but needing rain. A good crop of hay is being harvested. Potatoes and sugar beets are doing well.

LOS ANGELES SUMMARY.—The weather is gradually approaching summer conditions; considerable cloudiness but no rain. Navel oranges are blooming full, and more evenly than for years.

EUREKA SUMMARY.—Warm weather with showers greatly benefited grain and garden in some localities. Corn planting much delayed. Prospects for good crops were never better. Sheep shearing is in progress.

#### Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, May 14, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the Week.	Minimum Temperature for the Week.
Eureka.....	.49	49.98	45.96	40.93	64	48
Red Bluff.....	.47	30.55	24.23	23.70	76	52
Sacramento.....	.22	16.64	19.51	22.82	74	46
San Francisco.....	.58	18.75	20.51	24.45	64	50
Fresno.....	.01	6.33	11.06	12.75	86	48
Independence.....	.00	4.29	5.91	5.42	80	46
San Luis Obispo.....	.02	21.97	30.95	17.09	76	42
Los Angeles.....	.02	10.58	15.59	17.23	73	48
San Diego.....	.04	6.15	11.26	7.51	72	54
Yuma.....	.00	.68	3.80	2.87	98	56

THE swamp land owners of the Sacramento and San Joaquin rivers are preparing for active promotion of their interests in the way of drainage and river improvements which will tend to save from overflow some of the most productive land in the world. A large meeting was held in Sacramento on Tuesday and a strong organization was effected.



## THE VINEYARD.

### Field Grafting and Bench Grafting.

Those who are wrestling with the problem of resistants are under obligation to Napa county growers for the pains they are taking to set forth their observation and experience for the benefit of others. We have already had a number of such papers, the last being that of Mr. Bruck, whose writing is in the PACIFIC RURAL PRESS of March 1, 1902. We now find in the St. Helena Star a very interesting account of the experience of Mr. James V. Haire. He says: In discussing these two methods of grafting vines, I do not wish to be regarded as an authority on the subject. The ideas and conclusions herein expressed are the result of my own observation and experience in actual work. Mr. Bruck in his recent articles in the Star has given a very complete account of the method generally employed in grafting the resistant cutting or root and the treatment required in callousing and the caring of the vines in the nursery; so I take it for granted you understand what bench grafting is, as distinguished from field grafting, and will endeavor to state as briefly as possible the advantages and disadvantages of the respective methods.

**FIELD GRAFTING.**—I will first consider the method of field grafting. The first operation is the planting of the vines, i. e., the resistant rooted cutting in the field. They are allowed to grow one, two or more years before they are large enough to graft. During this period much labor is required to care for them properly, and the failure to give them the proper care at this time is the cause of much of the trouble and unnecessary expense that afterward ensues. When the vines begin to grow the top or uppermost buds start first, and, in districts subject to frost, are quite frequently bitten, giving the vines a set-back. The lower buds, just beneath the surface of the ground, then start forth, and the shoots which come from the lower buds are usually of the strongest growth. When danger of further severe frost is over the shoots which come out below the surface of the ground or below the point at which the vine is to be grafted should be removed and the growth forced into the top of the vine. If this is not done the first year and the vines have not attained a sufficient size to be grafted, these shoots or suckers are cut off during the pruning season, leaving a short spur which throws out additional suckers the next season. Here we encounter the first of the disadvantages of this method. When the vine on which such suckers are allowed to grow is grafted at the surface of the ground, this sucker spur must be cut off as close as possible in order that the buds at the base of it may be removed. This leaves a great wound, and, if the sap is flowing, which is usually the case, it exudes from this wound and does not flow up to the scion to nourish and sustain it. This flowing of the sap, or bleeding, continues sometimes for weeks before it congeals sufficiently to prevent further bleeding. If north winds prevail during this period the scion often dries out and fails to grow. A large percentage of the loss sometimes sustained can be attributed to this neglect in taking care of the stock.

**A RUSHING TIME.**—The season for field grafting is practically limited to forty working days, or such fair weather as generally intervenes between the first day of March and May 15. During this period the vineyardist is burdened with much other work; a greater scarcity of labor prevails than at any other season, and it is often difficult to secure competent persons to do the grafting and other work connected therewith. His next care is to guard against the cutworm, thripp or other pests which attacks the grafts by boring into the buds of the scion or cutting off the young shoots. By these operations of the pests, as in the case of frost, the growth of the scion is checked and suckers again break forth from beneath the ground. The removal of these suckers is essential and is a source of considerable expense, and neglect to do this work within a very short time is another cause of the large percentage of loss sometimes sustained.

**UNCOVERING.**—The next step in caring for the grafts is the removal of the earth from around the scion and the cutting off of the small fibrous roots growing from the lower part of the scion. This is generally done in June or July and is a very important part of the work. Where vines have been grafted beneath the surface, and especially in moist soils, it is necessary to go over the grafts two or three times in this manner; and if it is not done at all these roots will in a few years outgrow the resistant stock and decrease the resistant power of the vine. When grafting in the field the size of the stock is generally much greater than that of the scion. If the difference is not too great, the union is made in the same manner as in bench work, except that there is contact of the bark at one side of the vine only. But where the diameter of the stock exceeds 1 inch, the top is cut off squarely and a vertical incision or split is made, into which is inserted the scion, cut in the shape of a thin wedge, in such a manner that the bark of each is in contact along the whole depth of the split. This contact or union is on one side only, and the remaining portion of the stock becomes dead

at the top. As the scion grows it enlarges and gradually encircles this dead portion, but does not unite to it, so that the strength of the vine at the union is much less than it would appear to be, and vines so grafted are frequently broken off by being struck by the plow handle or singletree. At the end of the first season the average loss of grafts is about 20%; this is a fair estimate, taking vineyards generally. Add to this from 10% to 20% of the whole number of vines planted which were too small to graft the first season, we find that from 30% to 35% of the vineyard remains to be grafted. One-third of the land has therefore been cultivated at a loss. Besides, the vines which are to be regrafted are generally suckers from the old stock, and the chances of success with them are less than with stock which was never grafted. The same additional labor and expense is entailed throughout the season in caring for them, and again a percentage of loss, which usually requires the planting of new stock upon which to graft. In some vineyards this routine has gone on for six or seven years before a complete stand is obtained.

**THE RESULT.**—Now, let us consider this kind of a vineyard: The vines are of various sizes, ranging from one to six or seven years' growth. The roots of the oldest vines have entered the area allotted to the younger ones and robbed them of a part of their share of moisture and sustenance, and the result is that on light or dry soils the younger vines always remain dwarfed and never become as productive as the older ones; and this difference in productiveness generally increases with their age. Another disadvantage is the greater expense incurred before grafting can be done. The stock must be cared for by plowing, hoeing, and sometimes by suckering and tying, for two years on an average; on some soils where all the work of cultivation is well done, the greater portion of a vineyard planted with roots can be grafted the following year; but when the loss among these, together with the replanting of roots which fail to grow at first planting and all other setbacks are taken into consideration, it will be found that the average for the whole vineyard will be two years from planting to time of grafting. If his land costs him \$100 per acre, counting interest on that amount and the cost of cultivation, the vineyardist is at an expense of from \$30 to \$50 per acre before grafting commences.

**BENCH GRAFTING.**—In bench grafting the work can be done in rainy weather, and the time, which might otherwise be spent unprofitably, can be used to great advantage. The stock or cuttings could be made in December, and at the same time the buds could be removed. If the vineyardist has much work to do in the early spring, he can do his work in January and heal them in ordinary grape boxes, in sand slightly moist, and put them in a cellar or other closed structure where the temperature is most even and where they will not dry out. If he wishes to have them calloused very early he can do so by keeping such boxes of grafts in a close room and supplying a slight artificial heat by whatever method is most convenient. This method might be employed to advantage when they are to be planted directly in the field when calloused. I would not advise planting in this way unless the soil is of a very sandy nature and has abundant moisture throughout the year, insuring a vigorous growth, which is essential to perfect the unions.

In most cases the grafted cuttings when calloused are planted in a nursery in soil specially adapted to such purpose and having facilities for irrigation. This work should not be done too early; the soil should be sufficiently warm to cause them to start growing immediately.

It is generally early enough to plant when the greater part of the plowing and other field work is completed, and can usually be done by the regular help on large vineyards, or by the owner himself, where only a small number are grafted.

When the unions have healed sufficiently to support the top, the earth is removed from around the scion, the tying material and the fibrous roots removed, and the unions again covered sufficiently to protect them from the sun. Later in the season the roots which have started from the scion since the first operation are again removed, and the unions by this time have become sufficiently developed to stand exposure and the soil is removed from around them. The work of caring for them is now completed, unless they require further irrigation.

In the early part of winter the vines can be taken up and during rainy weather can be trimmed of surplus roots or top growth. Those having good roots and perfect unions can be graded as No. 1; those having less perfect unions as No. 2. In planting in the field, first and second class roots should not be planted in the same row, and, if possible, not in the same block, in order that every vine may have an equal chance to develop and the greatest uniformity of growth obtained. By carefully selecting the stock for planting in this manner, the great inequality in the size and productiveness of vines, often resulting from field methods, can to a great extent be prevented. The roots of each vine will have an equal opportunity to cover its allotted space, each vine producing its full share of the crop.

**ADVANTAGES OF BENCH GRAFTING.**—To summarize,

I will state that the principal advantages of bench grafting are as follows:

First.—By bench grafting the farmer can use his land in which his vines are to be planted for other purposes, and to some profit, while his grafts are developing in the nursery.

Second.—He eliminates entirely the expense and labor of ground suckering, and the vines are free from the wounds left by cutting off suckers.

Third.—He can obtain a perfect union, avoiding the dead core which so frequently results from grafting large vines in the field.

Fourth.—In planting bench-grafted vines the unions can be kept uniformly at the surface of the ground, or a little above or below, as is desired—a result which can not always be obtained in the field.

Fifth.—The growth of the bench-grafted vines is at all times practically the normal growth of an ungrafted vine, while in the field vine it is often so rank or unnaturally rapid that the new shoots are frequently broken off by the breeze, doing great injury to the vine. On account of this forced growth during the first year, it is difficult with some varieties to form a good crown to the vine.

Sixth.—If a new variety of acknowledged excellence is introduced and it is found not to take on a given resistant stock, the loss in bench grafting is limited to the cost of stock, grafting and nursery expenses; while, if the experiment is made in the field, the loss would be much greater, as the use of the land for at least two years would have been without profit.

Seventh.—The season in which bench grafting can be done is much the longer, and the work is not affected to any great extent by the weather; besides, in bench grafting the vineyardist can to a great extent control the conditions which affect or retard the development of the vine at every stage, while in field work he is at the mercy of unfavorable seasons, pests and droughts.

In conclusion, I will say that while I do not think that bench grafting will be the ideal method of the future, I think that when grafting must be done the bench method is by far the cheaper and more convenient, and gives a vine the resistance which is most likely to endure.

### Fresno Ordinance Against Vine Cuttings Void.

In the suit of Clara W. Pew and husband against the county and the Horticultural Commissioners for the destruction of a lot of resistant cuttings alleged by the Commissioners to have been imported by the Pews from a quarantined district, Judge Austin has rendered an important opinion declaring Ordinance No. 97 (the vine-cutting law) of the Supervisors to be illegal and void in that it is in restraint of trade and permits the confiscation of property without due process of law.

Judge Austin in his opinion says: "The ordinance purports to prohibit the bringing into or receiving within this county of 'any grape vine, roots or rootings,' absolutely, no matter where grown or produced, and without reference to the question as to whether they are healthy or diseased or whether their receipt or importation into this county could or would be detrimental or beneficial to the horticultural interests of this county."

The findings go on to say that in the opinion of the court an ordinance drawn with due regard for law and the constitution would be valid, but this law giving the Horticultural Commissioners the power to seize and destroy trees and vines, whether diseased or not, is clearly invalid. "The attempt to authorize the Commissioners to seize and destroy property without due process of law cannot be harmonized with those constitutional guarantees which secure to every one the right to life and property."

For these and other reasons Judge Austin decided that the ordinance of the Board of Supervisors is void.

Mrs. Pew has sued for \$1150, the value of the cuttings, and damages.

### Resistants at Fresno.

We learn from the Democrat that a large quantity of resistant stocks have been brought from France by Mr. M. Theo. Kearney. The varieties imported from France are the Riparia Gloire, the Rupestris du Lot and St. George, Rupestris Gloire, Riparia Grand Glabre, Aramon Rupestris, Rupestris Martin. They are the very best of varieties which the French have adopted as the most desirable varieties to plant. The Aramon Rupestris is especially valuable, and its name implies a cross between Aramon (Vinifera) and Rupestris (American), adapted for direct production as well as for grafting.

The work of planting is under the supervision of R. Tcherassy, who is an expert in fruit and grape culture. He has extensive experience in resistant grapes, as he was in France in the center of the phylloxerated districts when the invasion was raging some years ago, and has devoted years of study to the question. The work of planting these cuttings, although this late in the season, will be pushed through with all possible speed and good care will be given them to insure their future success.



## HORTICULTURE.

## The Pear-Blight-and-Bee Problem.

Mr. Charles Downing of Armona, Kings county, in whose orchard pear trees were covered with netting to test the effect as to occurrence of blight, as has been fully described in our earlier issues, has addressed a communication to the Kings county supervisors as follows: In the matter of experiment of covering pear trees, authorized by you with a view of making observations regarding pear blight, I submit the following report: On March 13 I covered with mosquito netting a P. Barry tree, on which the blossoms were out of the bud but not opened out. March 14 I covered a Beurre Clairgeau tree under the same conditions, also a Bartlett tree on which the blossoms were not yet out of the bud. On March 18 covered three more Bartlett trees with buds not opened. Of the four Bartletts covered, two were apparently perfectly healthy and two had some dead wood and scars, due to blight last season. These trees are sixteen years old.

**THE BLOOMING.**—The blossoms opened as follows: P. Barry, March 18; Clairgeaus, March 21; Bartletts, March 31. The bloom on all varieties was very full and the trees appeared healthy. By the 10th of April the Barrys and Clairgeaus had set, with the exception of some late blossoms. During this time the apricot and peach orchards throughout this district had bloomed heavily and the fruit on them had set.

April 14 the Bartletts were in full bloom, with some fruit set. During the time when the apricots and peaches were in bloom there were very few bees or other insects to be seen in the pear orchards. As there are peach orchards on all sides of my pear orchard, I attribute the absence of bees from the early blooming pears to the fact that they found plenty of feed in peach orchards nearer their home. This gave the Barry and Clairgeau blossoms opportunity to set without infection, and, as a result, on these trees there is a full crop of fruit. There are about 3000 trees of these two varieties in the orchard, and the only damage to them is on the small amount of blossoms that came out after the peach orchards were in bloom. As soon as the peach bloom was over there were bees on every Bartlett tree in my orchard.

**THE BLIGHT.**—On April 17 an examination of the Bartlett trees showed that the blossoms were almost completely withered, and that blight was just beginning to show on the new twigs growing out of the blossom clusters. The only fruit to escape the destruction was the small amount already set, possibly 3% of the total amount of bloom on the Bartletts. An examination of the covered trees at this time showed no signs of blight, the blossoms appearing healthy and some fruit set. In another week's time, however, blight appeared on some of the blossoms on the covered trees, on one tree much more so than on the others. During this time we had some wind and rain and the netting became spread in some places, and holes were torn in it where it rested on ends of branches. We found some dead bees inside the netting, which had evidently got in through the openings and had been unable to find their way out.

On May 2 I removed the covering from all the trees. They all have some blighted blossoms, but none are as badly affected as the trees around them, and there is noticeably more fruit on them than on any other Bartlett trees in the orchard. The Barry and Clairgeau trees that were covered have a good crop of fruit, with some blighted blossoms on the Clairgeau tree and a very few on the Barry tree.

**BEES NOT ALL REMOVED.**—The Bee Keepers' Association requested its members to remove their bees this spring from a certain territory which included my orchard. I believe that their members generally complied with this request. Some owners of bees, however, refused to move them, and I have learned recently that a warehouse on one of the large prune orchards contains thirty or forty hives, the existence of which I was not previously aware. Although some bees were removed from this immediate neighborhood, there were enough left to crawl over every Bartlett blossom that had not set up to the time that food in the peach orchards was exhausted.

My conclusions as to the experiment are these: As long as there are any trees in this territory in which pear blight exists in active form it will be carried to the blossoms by bees and the blossoms destroyed. As to whether, in addition to the destruction of the blossoms, the trees themselves will suffer will, I believe, depend quite largely upon climatic conditions. Last season, during which we had considerable warm, moist weather, with no very hot weather until after the period of active growth, the damage to the trees was great, and in my orchard necessitated a heavy pruning last fall and winter to remove all the dead and diseased wood. Up to the present time this season the disease does not appear to be working actively on the trees, and my belief is that warm, dry weather will check the disease so that the damage this season will be confined largely to the loss of blossoms. If this proves to be the case, and the bees can be kept out of the pear

orchards next season during the blooming period, to prevent the spread of any disease that might possibly be carried over, I believe the disease can be stamped out and our pear orchards become again the valuable property they should be.

During the course of my investigations last winter on this subject I received information that laws had been passed in some parts of the East prohibiting the keeping of bees within 5 miles of apple or pear orchards, owing to prevalence of blight. I endeavored to ascertain where these laws were in force, and learned that there were none actually in force, but that such laws had been proposed.

**GREAT LOSSES OF PEARS.**—As you are yourselves aware, the damage to pear orchards in this county during last season was very great, both in loss of crop and injury to trees, a considerable acreage of trees from five to ten years of age having been dug up. So far as I am personally concerned, I estimate my money loss on my crop of Bartletts for last season, due to blight, at \$10,000, and my loss this season up to the present time at not less than 1000 tons of fruit on 9000 trees; and under these circumstances I feel justified in taking steps next fall, and before blooming season next spring, to prevent, as far as possible, inoculation of blossoms in my orchard by bees belonging to other people.

**THE BEE MAN.**—Referring to the report, which appeared in the Hanford Journal under date of April 21, over the signature of Mr. F. E. Brown, secretary of the Central California Bee Keepers' Association, and copied by fruit papers throughout the State [see PACIFIC RURAL PRESS of May 3], relative to his observations as to conditions of trees in my orchard, I beg to state that Mr. Brown's visit was made at a time when I was in San Francisco, and that he did not interview the foreman, who could have explained conditions to him. So far as I can learn, the only person he talked to on the place before publishing his report was the stableman. In regard to Mr. Brown's statement that the matter of the laws in the East had been run to earth and found to be without foundation, it was I who sent him the letter from a professor in an Eastern agricultural college, stating that I had been misinformed as to laws regulating the keeping of bees within 5 miles of pear orchards having actually been passed, but had been proposed. It would appear from his published report that I had made a public statement which had been proved incorrect by the bee men. I sent him an invitation to be present with a number of other gentlemen when the trees were uncovered, and results properly noted, but he failed to appear.

## CEREAL CROPS.

## Cost of Growing Wheat in Kansas.

In "Kansas Wheat Growing," which is the special title given to Secretary F. D. Coburn's March quarterly report of the Kansas Board of Agriculture, there is found the following interesting summary:

A consensus of the detailed statements of 120 representative Kansas winter wheat growers, representing fifty-six different counties, as to the cost to produce and put in the bin or car an acre-crop of wheat, yielding twenty bushels, is, itemized, as shown below:

Average cost of plowing (or disking).....	\$ .96
Harrowing.....	.28
Seed and seeding.....	.92
Cost of harvesting and stacking (or shocking).....	1.36
Thrashing and putting it in bin or cars.....	1.60
Wear, tear and interest on tools.....	.29
Rental of land, or interest on its value.....	1.90

Total cost per acre, or twenty bushels.....\$7.31

Averages of other items, gathered from those furnishing the 120 most carefully made reports quoted, are as follows:

Average number of years each of these 120 reporters has raised winter wheat in Kansas.....	19
Average number of acres raised by them annually during these years.....	527
Average quantity of seed sown per acre (pecks)....	4.4
Average yield per acre (bushels).....	18.2
Average value of wheat land per acre.....	\$24.18
Average value per acre of wheat for pasturage....	1.15
Average value of straw per acre.....	.81

A digest of the same items of information, taken from the interviews with eighty growers, in the thirty counties constituting what is known as the "wheat belt," which produced 79% of the 90,000,000-bushel crop harvested in 1901, gives averages thus:

Average cost of plowing (or disking).....	\$1.00
Harrowing.....	.28
Seed and seeding.....	.95
Cost of harvesting and stacking (or shocking).....	1.48
Thrashing and putting in bin or car.....	1.61
Wear, tear and interest on tools.....	.27
Rental of land, or interest on its value.....	2.06

Total cost per acre, or twenty bushels.....\$7.65

Other averages derived from reports of the thirty wheat-belt counties are as follows:

Average number of years each of the eighty reporters has raised winter wheat in Kansas.....	21
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Average number of acres raised by them annually during each of these years.....	613
Average quantity of seed sown per acre (pecks)....	4.4
Average yield per acre (bushels).....	18.5
Average value of wheat land per acre.....	\$25.29
Average value per acre of wheat for pasturage....	1.07
Average value of straw per acre.....	.80

From the total cost per acre, as shown in both the foregoing computations, there can rightly be deducted the value of the pasturage and straw, which amount to considerable sums, and frequently to more than one-third the cost of producing the crop.

## FRUIT MARKETING.

## The New Fruit Shippers' Organization.

The fruit shippers have completed their organization, known as the "California Fruit Distributors," which was described in the PACIFIC RURAL PRESS of May 3, by the election of the following officers: President, Frank H. Buck, Vacaville; first vice-president, W. E. Gerber, Sacramento; second vice-president, A. C. Short, Penryn; secretary and manager, Alden Anderson, Suisun; treasurer, H. A. Fairbanks, Sacramento; executive board, A. J. Hechtman, San Francisco; G. B. Katzenstein, Sacramento; F. B. McKeivitt, Vacaville; Geo. D. Kellogg and A. H. Schnabel, Newcastle. The board of managers were elected as follows: A. J. Hechtman, San Francisco; Geo. B. Katzenstein, Sacramento; F. B. McKeivitt, Vacaville; Geo. D. Kellogg and A. H. Schnabel, Newcastle.

**THE OFFICE IN SACRAMENTO.**—A lease has been taken of the rooms formerly occupied by the Fair Oaks Association, 301 J street, and the offices of the California Fruit Distributors has been opened for business. Alden Anderson has taken up his residence in Sacramento and has assumed charge of the general management of the new organization. It is said that there is no intention or effort at exclusiveness. All of the shippers operating in the State during the last season are urged and expected to become members of the organization, which will gladly attend to the marketing of their fruit.

**WHAT THE ORGANIZATION PROPOSES.**—To a Record-Union reporter, George B. Katzenstein, chairman of the board of managers, spoke freely: We are on the eve of the shipping season and the crop of deciduous fruit promises, if nothing unforeseen happens, to reach 8000 or 10,000 carloads. We know the capacity of the Eastern markets, and unless we secure a proper scattering or distribution of the fruit to many markets and new ones, the result is liable to be a slump in those markets. Anticipating these conditions, an effort was made to unite the various shippers in the district in order to act intelligently and comprehensively, and thus avoid slumps. Heretofore large firms of shippers have operated independently of each other, and it frequently occurred that unusual proportions of their fruit were sent to the same market at the same time, resulting in a glut, and poor prices.

One of the most important features of the new organization is that more attention will be given to the f. o. b. markets to which fruit is sold directly, and to the creation of new markets of that description. Heretofore there has been a conflict in the smaller markets. One seller would sell a carload to a dealer, who at the same time would receive a consigned car. The result would be that the dealer lost heavily, and that the growers of the consigned fruit got nothing for it.

The California Fruit Distributors is an organization of the kind where every shipper is made to show his hand to the general manager of the organization, and report the actual points of distribution of his shipments. The general manager, to a certain extent, is the controller of all shipments of fruit, and like a train dispatcher, has his chart spread before him and follows every shipment to its destination. If too much fruit is booked to arrive at one market at one time he notifies the shipper and instructs him to direct some of it to another point, to the end that conditions that lead to the glutting of the market may be averted.

It is the intention of the new organization to place immediately traveling men in the field, east and west of the Missouri river, with a view to developing new markets for California fruit. It can be readily understood that no individual firm of shippers could undertake such an extensive plan because of the heavy expense involved, but by unity of action each shipping firm bears its proportion of the expense, and much good can be done for the fruit industry of California in general.

It is intimated that there is to be a setting aside of certain districts in which certain firms shall dictate terms and prices, etc., all of which has no foundation in fact. No firm uniting with the new organization is giving up any part of its individuality or business. Each firm is left free to conduct its business in its own way and do all business on its own account. In short, the new organization is to be more in the nature of a clearing house than anything else, and the manager will be given all information possible as to shipments, distribution, routing, etc., so



that the entire business of the season may pass in review before him from day to day.

Another very important feature of the new organization is to prevent so-called "knocking," which, unfortunately, has existed in the past. Other lines of business have their organizations for the purpose of promoting their business along legitimate lines, and it has always seemed strange to me that such an organization on behalf of the fruit industry has never been accomplished before. The whole scheme of the new organization is for the benefit of the grower as well as the shipper, since there is a mutuality of interests throughout both lines of business. If the business is one of consignment on a commission basis naturally the more money for fruit the larger the commission for handling the business. On the other hand, where persons ship fruit on the f. o. b. plan, the higher the price obtainable the better the result for the grower.

## THE POULTRY YARD.

### Chickens Made to Order in Petaluma.

Where there is a large special product in a region there are sure to be local devices and methods resulting from local deep thinking and energetic action. It seems, according to current accounts, that the Petaluma district is making this contribution to advanced poultry keeping. A writer for the Chronicle tells of A. E. Bourke, who, in a series of big whitewashed buildings recently put up on a level stretch of land just outside the limits of Petaluma, has established an industry that is new. He is at his place of business every day to receive and receipt for eggs, which he places in incubators of his own manufacture, and as a mere matter of speculation he watches over these eggs until they hatch chickens or all hope of them is lost. If a chicken is hatched he gives it either an elementary, intermediate or post-graduate course in self-culture, as is desired, and charges rates accordingly.

Suppose you have an egg and you take it to Bourke. He labels it properly and puts it in a cozy corner of an incubator. Then, day by day, he pays as much attention to that egg as any mother hen could possibly do. If at the end of a certain time nothing happens to it you can get the egg back or have it disposed of without cost to yourself. But if a chicken is hatched you must pay Bourke 3 cents. Then you can take the chicken away or leave it in Bourke's charge to have it "brooded." This means that it will be taught when and what to eat and drink, how to roost at night, and many other things that a chicken ought to know. The cost for such training as this varies from 2 to 4 cents, so that the chicken turned out with full honors represents a total expenditure of only 7 cents.

During the last eight or ten weeks he has received and receipted for nearly 60,000 eggs and has hatched 45,000 chickens, a good many of which were given finishing touches in the matter of training in personal deportment.

How HE CAME AT IT.—Bourke used to be a plumber in Los Angeles and he accumulated money enough some years ago to permit him to devote all his attention to the invention of his incubating and brooding plants, the one to hatch out chickens and the other to train them in the way they should go. For a while he conducted his experiments in Los Angeles, and he says that in the past nine years he has used more than a million eggs in testing his apparatus as he slowly developed it. But he thought that the climatic conditions of southern California were not suitable to chicken breeding on so extensive a scale as he had in mind, and last spring he moved to Petaluma. He began at once the erection and equipment of his present establishment, and the poultrymen of the neighborhood have watched it grow to completion with constantly increasing surprise and interest.

THE OUTFIT.—He has one large building devoted entirely to the manufacture of incubators and brooders, and two others which might, taking the educational character of the institution into consideration, be called dormitories. On the first floor are rows upon rows of incubators filled with eggs. Above stairs are scores of apartments separated by low fences of wire, and here thousands upon thousands of young chickens are kept. They are of all ages under three months, of all colors, shapes, sizes, breeds and dispositions.

EDUCATION.—Standing beside an enclosure holding fully 1200 three-weeks-old chickens, Bourke said: "My theory is that a chicken should be cared for after it is hatched. It's all right to surround 'em with every care while they're in the egg and the egg is in the incubator, but it's wrong to turn 'em loose on the cold world as soon as the shell breaks. Of course, when they've got a mother it's different. She brings 'em up right; she tells 'em what they ought to do and what they oughtn't to do, and by the time they leave her they are pretty wise as to the ways of the world. I've known plenty of chickens that were able to take their place in good society and be

a credit to their family a month after they were born, but that was because they had a mother to tip 'em off.

"Now, an incubator chicken gets no advice from its parents; it ain't surrounded by what you might call good home influences. It is born an orphan, and it wanders out in the world with no friends and no ideas about what is expected of it. It eats any old thing it can get, it catches cold by standing in draughts, and it mixes up in fights that could be avoided if it had been properly brought up. Nine chances out of ten it will have some bodily complaint before it's a year old—maybe lose an eye or break a wing. And it's sure to have accumulated a bunch of bad habits that will affect its value and be a source of annoyance to its owners. Nice, fat, healthy, well-behaved chickens are what the public demand, and that is what I propose to hand out.

"My brooder is designed to take the chicken as it comes from the incubator, and by a series of educational and disciplinary measures to equip it mentally and physically to make its own way in the world—to take a pride in itself. We teach it how to eat and what to eat, and we try to make it eat at regular hours. We provide places for it to sleep, and we see that it roosts properly. We teach it not to drink impure water, to keep out of the way of wagons, and to avoid personal encounters with other chickens. All this sounds improbable, of course, but you can go through this place from end to end, taking the freshly-hatched chicken as a starter and concluding with the young broiler just ready to be delivered to its owner, and you will see for yourself that my system is working well."

THE GRADUATES.—A trip through the establishment was made on this invitation, but it must be confessed that to the lay mind Bourke's chickens neither look nor act like other chickens the world over. To be sure, they are seemingly a happy, care free, wholly unconventional lot of chickens, and every last one of them appeared to enjoy robust health. Then, too, it cannot be doubted that Bourke exercises a really remarkable control over them. After a photographer had spent an hour in a vain personal effort to get the little bits of yellow down and feathers together long enough to snapshot them, Bourke took them in bunches of from two to a thousand, and by simply using his voice held them to almost soldier-like attention. He has marvelous skill in imitating all sorts of chicken calls.

But he has not taught his fuzzy little pupils good manners. The writer dug a worm from under a stone and tossed it into a compartment of chickens undergoing what might be termed the post-graduate course, and there followed a free-for-all fight that called forth a protest from Mrs. Bourke.

"That wasn't fair," she said. "We don't give them worms, and when they see one the temptation to grab it is irresistible."

"Then they are all vegetarians?" was asked.

"Yes. We give them plain food and plenty of it, but we don't deal in luxuries."

Not surprising, this, since the highest priced students pay only 7 cents for both board and tuition.

"And suppose a chicken dies before he is graduated—what then?"

"Then the owner loses his chicken. He doesn't have to pay us anything when we take the egg, and we only guarantee to give it our best attention. Of course, accidents are bound to happen in this business, and our patrons allow for that."

Asked if he thought he could make a success of his venture, judging by his experience thus far, Bourke replied with emphasis that he had no doubt of it. He is receiving about all the eggs he can handle, and is not seeking to get new customers. In several Eastern cities, too, his system is in operation, and he is satisfied that in the course of a few years he will have brought about a big change in the chicken dynasty.

"It's all in the education," he says. "Start 'em right when they're young, and they'll be all right when they reach the table. Otherwise—but I don't want to criticise those who follow the old-fashioned method. They just don't understand chicken character—that's all."

## THE VETERINARIAN.

Answers by Dr. C. W. Fisher.

### THREE CASES OF SKIN TROUBLE.

TO THE EDITOR:—I have a valuable young cow who has what appears to be a bacterial disease on her back, over the hips and near the spinal column. The disease has developed within the last six weeks and is spreading. The sores are small and have a raised appearance. I enclose section from one of the sores. Will Dr. Fisher please examine and prescribe through the columns of your valuable paper?—C. A. B., Kelseyville.

TO THE EDITOR:—I would like to find through the PACIFIC RURAL PRESS a cure for a skin trouble of a cow. It is of some standing; I have used remedies already, but they were unsatisfactory. I think it is mange; it forms a thick scurf on the skin, principally on the neck, and it itches.—SUBSCRIBER, St. Helena.

TO THE EDITOR:—Our calves are troubled with some eczema around the eyes and on their heads and necks, causing them to lose their hair in patches. I would like

to know cause, prevention and cure. It only affects calves and a few yearlings.

The scabs mentioned by the first correspondent above are merely crusts, due to thickening of the cuticle and drying of a gummy exudate. This is probably caused by a minute parasite called *Psoroptes communis*, variety *bovis*. This little insect lies on the surface of the skin, and, by biting, causes the crusts to form. Itch is sometimes called mange, but is not truly so, because in the latter case the insect burrows into the skin. This is probably itch.

First isolate the cow from the others. Give her a good washing with soft soap and warm water, using a stiff brush to remove the crusts. Then apply thoroughly a solution of one part creolin, zenoleum or phenyle to fifty parts of water for two consecutive days. Follow with sweet oil to soften the crusts, or a mixture of flour of sulphur and lard, equal parts. Another mixture which gives very good results is: Oil of tar, 1 ounce; softsoap,  $\frac{1}{2}$  pint; sulphur,  $\frac{1}{2}$  pound; alcohol, 1 pint. Repeat the wash in three or four days. Wash the stall and posts where the cow has recently rubbed with the solution of zenoleum or phenyle.

The above is also the answer to the second letter. In the third case, also, try the treatment as above. Use something to wash the stalls, feed mangers and everything where the calves run. The zenoleum or phenyle—both sheep dips—are good, followed by whitewash.

### AN EYE TROUBLE IN PIGS.

TO THE EDITOR:—There is a disease among pigs in this locality; the eyes become sore and fill up with matter; they become blind and soon die. What is the trouble and the remedy?—L. P. DENNEY, Tulare county.

I can not answer. Consult some good local veterinarian, or, if the trouble continues, write more carefully the symptoms to Dr. A. R. Ward, Veterinarian State University, Berkeley.

### A TURKEY DRIVE.

TO THE EDITOR:—I have been a steady subscriber since 1891 and this is my first query. I saw in an Eastern paper an account of some disease, name not given, prevalent among turkeys that makes their raising unprofitable, and that in many localities they were going out of the business. I will have to follow suit unless some relief can be found. For the past four years I have lost scores of young turkeys when about the size of a partridge, sometimes five in a day; the past year larger ones, nearly full grown; in October I lost my gobbler, a 16-pound bird, and within a week I have lost two 18-pound hens. The symptoms are: Off the feed for a few days, moping, discharge thin, watery, streaked with yellow. Although I have tried all sorts of remedies, I have never saved a sick bird. A post mortem shows the liver greatly enlarged and covered with ulcers, sometimes raised, sometimes depressed; everything else was in a normal state. My poultry, in which I take much pleasure, has the best of care; but, unless some remedy can be found, this will be my last season with turkeys. If you can throw any light on this subject through your paper you will confer a favor on an old subscriber.—READER, Fresno.

Your turkeys are probably dying with entero hepatitis, or "blackhead," judging from your brief symptoms. This is a disease seen in certain sections of the Eastern States for some time. It was first studied by Dr. Theobald Smith, then in the Bureau of Animal Industry, Washington, D. C., now of Harvard University. The first diseased turkeys were sent from the Rhode Island experiment station in 1893 or 1894—later from other places. Now it is in many States. Your description names some important points about the disease.

You speak of losing them in numbers from one to two months old, then an occasional adult bird. The diarrhoea, with the feces streaked with yellow, the enlarged liver, with yellow spots, are suggestive of entero hepatitis. This name was given because the disease began in the caeca of the intestines, causing inflammation and thickening of that part of the intestine having a blind, closed end. The inflammation is then carried to the liver, causing enlargement and the peculiar bright yellow and green-colored spots. If you would write more careful details, so that we may feel more sure this is the disease, we will write further in regard to it; would also inquire of the latest knowledge in the East, as it is now ten years since we have actually given the disease any attention. Look carefully for tapeworms in the intestines, as they cause trouble with turkeys.

San Mateo.

C. W. FISHER, V. S.

We lately mentioned the concentration of coyote scalp claims against the State and the coming of a suit against the commonwealth arranged for by the last legislature. It seems that the State proposes to fight in its own behalf, and the attorney for the State holds that at least one-third of the \$335,000, claimed for coyote scalp bounties will be found spurious. He is informed that scalps were imported from Arizona, and that in some cases scalps were cut in small strips and each made the basis of a claim. It is alleged that claims were sometimes made out in blank and afterwards "raised," and that sometimes the names of hobos and mythical persons were put in certificates. This is a fine state of things, but probably the court will get to the bottom of it.



## Agricultural Review.

### ALAMEDA.

**FRUIT NOTES.**—Niles Herald: Almonds, which it was feared were ruined by the rain during the blossom period, are showing up good. All late varieties will have a heavy yield. Cherries have set heavy and are doing nicely, except the Royal Annes. These latter, it is feared, have been killed. Apricots are placed at about 85%. Some, however, are lighter, while others are above the average. The prune crop is large. While there has been a dropping the past ten days, it has only resulted in making sure a good crop of good-sized fruit instead of overloaded trees of exceedingly small fruit. E. A. Ellsworth, who has the largest fruit drying and packing establishment in Alameda county, has leased the Niles Cooperative Fruit Association plant and will run it this year in connection with his home drier. The capacity of the combined plants will be 1400 tons of apricots and 2000 tons of prunes.

### FRESNO.

**HOPPER SAID TO BE DAMAGING VINES.**—Fresno Dispatch: Reports have come in that the dreaded vine hopper is at work and in some of the vineyards west of town has stripped the vines of the tender foliage, thus exposing the tender berries to the rays of the sun, with the result that they will drop shriveled kernels later on. The hopper is unaffected by the customary washes and sprays, because it works on the under side of the leaf, sucking out its sustenance at the veins. Weather Observer J. P. Bolton has been experimenting with his smudge pots, burning crude petroleum used to prevent frost damage. He believes that by lighting the oil fire pots on warm, calm nights, and starting the insects on the wing, they can be exterminated by the fire and fumes of the petroleum. The matter is in the experimental stage, but it is believed the method of burning and smoking out the pest will prove of value to vineyardists.

### LOS ANGELES.

**GOOD PROSPECTS FOR FRUIT AND VEGETABLES.**—Santa Ana Blade: Last week, while in Los Angeles, F. R. Todd, manager of the big cannery, set a gang of pickers to work in the 100-acre field of peas owned by the California Cannery Association. The peas will be handled by the Los Angeles cannery. Mr. Todd has but recently visited different parts of southern California for the purpose of forming some idea of the extent of the coming fruit crop. He says that prospects were never brighter and that a big crop will be harvested, unless a hot wind should come along and burn up the fruit.

**DEVOUT BEES.**—Azusa Pomotrophic: For a month or more worshippers at the Presbyterian Church have found the front entrance anything but an attractive place to gather before or after services. The sudden unpopularity of the spot is due to renewed activity of a huge swarm of honey bees which for years has occupied quarters in the church steeple. So long as their numbers were comparatively small and they were content to live pretty well up toward the belfry, no objection to their occupancy was raised. But this season their numbers were found to have greatly increased, and they accordingly proceeded to occupy more storage room, and, in so doing, found it convenient to go in and out through some crevices each side of the front door. About this time the trouble began, and a week or so ago they became angered and forced everyone to enter the church by the back door. The next day a few boards were torn from the front of the building and three or four swarms of bees lured into hives and taken away. In spite of this, however, a goodly number still occupy the region about the belfry, from which point it is hoped they will be dislodged ere long.

**DECIDUOUS FRUIT ASSOCIATION.**—Pomona Progress: The Pomona Deciduous Fruit Association has elected the following directors for the ensuing year: A. L. Taylor, J. L. Colvin, I. M. Lee, Theodore Bost and H. W. Beale. Adjournment was taken until May 24th, at which time the by-laws are to be changed.

### MARIN.

**MORTGAGE GIVEN FOR \$135,000.**—Petaluma Courier: A mortgage was filed in the Marin county recorder's office for \$135,000 last week at San Rafael, to cover a loan made by the Sonoma County Bank of Petaluma to the Burdell estate. The mortgage was probably the largest individual mortgage ever filed in Marin county. The money was borrowed to settle up the bequests, legacies, balances, etc., of the estate of the late Mary Burdell, and the instrument covers the famous Olompali ranch, Black Mountain

district, and broad acres running well into the thousands.

### NAPA.

**CHANGED PROSPECTS OF FRUIT CROP.**—"R" in Register: The early promise of a very large crop of fruit in our orchards has lessened considerably of late. For some cause, not clearly defined, the tender fruit of some varieties has dropped to a considerable extent. In this vicinity this will apply especially to prunes and some varieties of cherries. On every hand is heard the expression that the prune crop will be smaller than was expected, for the trees blossomed very heavily. A very excellent quality of fruit is expected.

**MORE PROMISING REPORT OF FRUIT YIELD.**—Register: While there are orchardists here and there who will gather a light crop of prunes, fruit trees generally in this section are heavily loaded and the yield will be all the producer can ask for. William M. Fisher, whose orchards and fruit packing establishment are northwest of town, says prospects hereabouts are most satisfactory. He recently made a tour of the valley.

### ORANGE.

**POOR APRICOT CROP.**—Anaheim Gazette: Horticultural Commissioner I. N. Rafferty of Santa Ana has been on a trip to El Toro to investigate the complaint that orchards in that neighborhood are infected with disease. He says there is little scale to be found there. The apricot crop promises not more than half the usual average, and in some places there will be hardly any crop at all. The cause assigned is that in January the weather was so warm that buds swelled prematurely and were afterwards damaged by cold weather in February and March. Some orchards that bore heavily last season will have scarcely any apricots this season. In the lower land toward the south trees are heavily laden.

### RIVERSIDE.

**FOUR HUNDRED CARS OF MELONS.**—Indio Submarine: The Southern Pacific Railroad is making preparations for handling 200 cars of melons for Ruddock, Trench & Co. and 200 cars for the Coachella Valley Producers' Association. These preparations are being made on the basis that 800 acres are in cantaloupes and coming on in good shape—150 acres at Indio, 224 acres at Coachella, 300 acres at Thermal, 100 acres at Walters, 26 acres scattering. It was believed that from 1500 to 1700 acres would be planted, but many did not get down wells and failed to plant. The winds of the past month have further cut down the crop and emphasized the need for windbreaks. The railroad company is making an honest effort to ascertain the exact acreage, with the view to supplying the proper number of cars promptly.

**LIGHT HONEY CROP.**—Press: The bee men whose apiaries are within reach of orange groves are doing well. But in the mountains the outlook is discouraging. The sage has not bloomed, the cool weather has been unfavorable and there is a good deal of trouble with foul brood.

### SAN BERNARDINO.

**LAMBS KILLED.**—Sun: A. L. Parrish came down from the mountains and reports that a number of lambs which were being brought down from the higher levels fell into a rapidly flowing stream; and before they could be rescued, thirty of them were either drowned or killed outright, or were so badly injured that they had to be shot.

### SAN JOAQUIN.

**MUSHROOMS GREW THROUGH CONCRETE.**—Stockton Independent: The immense power in the growth of vegetation is clearly demonstrated at the Miller warehouse, on the south side of Mormon channel, near Center street. M. P. Stein says that a few days ago he noticed that the concrete and bitumen floor was being forced upward in the shape of hillocks in two places. He could not account for the change in the smooth surface for several days, until the flooring cracked open and two large mushrooms forced their way

upward into the fresh air. By actual measurement Mr. Stein says that the mushrooms forced their way through 4 inches of solid concrete and 2 inches of bitumen and it must have taken a lot of power to gradually break up the flooring, which is like a rock. There was not a crack in the floor when the mushrooms commenced to grow underneath it, and the concrete and bitumen simply gave way under the immense pressure exerted on it.

**BIG LAND SALE.**—Lodi Herald: M. E. Wright of San Francisco has purchased an undivided half interest in 3600 acres between Fourteen-mile and Twenty-one-mile sloughs on the north side of the San Joaquin, west of Stockton. The other half is owned by R. C. Sargent. The land is as yet unreclaimed, but it is understood that the two owners contemplate its early improvement. The half interest was bought for the nominal sum of \$20,000; but it is understood that many thousand dollars will be spent on its improvements, after which it will be worth a vast fortune.

### SAN LUIS OBISPO.

**THE SHEEP SHEARERS RETURN.**—Tribune: The sheep shearers who have been out in the eastern part of the county under the leadership of M. Vega have returned to town, having finished the spring clip. With their return the shears which they used, which are no longer fit for slipping wool, have been turned over to the second hand stores, where they are being sold out at a nominal figure to those who want them for cutting grass and weeds on the edge of lawns. The sheep shearers—nineteen in number—who returned a few days ago from their shearing trip to Pozo, Cholame, Dudley and Coalinga clipped about 2300 sheep. Z. Rodriguez made the best average daily record on the number of sheep sheared, it being seventy. The prices paid per sheep were 5c, 5½c and 6c, varying as to the growth of wool.

### SHASTA.

**FRUIT TREE PESTS.**—Free Press: The fruit tree pests have become so numerous in the orchards around Anderson that the orchardists are endeavoring to secure official action with a view to having them exterminated. To that end they have a petition before the supervisors praying the appointment of a board of horticultural commissioners for Shasta county, in accordance with the statutes, and in the petition the names of Wm. Weaver and C. N. Tharsling of Anderson and Geo. A. Lamiman of Olinda are recommended as such commissioners. The principal pests complained of are the San Jose or pernicious scale, codlin moth, pear fly, slug and peach twig borer.

### SOLANO.

**HEAVY SETTING OF PLUMS.**—Republican: James U. Spence exhibits a branch of Clyman plums from the Pierce orchard on which the fruit is as thickly clustered as grapes, and its weight broke the limb from the tree. The branch is about 4 feet long and has 500 plums on it. As the whole crop is similar to this, its enormity can be better imagined than told. Much thinning and propping will be necessary.

### SONOMA.

**PLENTY OF PRUNES.**—Santa Rosa Dispatch: Reports recently sent out from here to the effect that the prune crop of Sonoma county was badly damaged by early rains was largely exaggerated. Indications are that Sonoma will have a bigger and better crop than last year, and the quality will be excellent.

### STANISLAUS.

**A \$2500 DAMAGE SUIT.**—Modesto Herald: Ora McHenry goes East soon to defend a suit brought against him by a Philadelphia concern for \$2500 damages. In 1900 he shipped to the concern, under contract, packed prunes and raisins from the Bald Eagle ranch, in this county, to the value of from \$7000 to \$8000. The fruit was shipped and routed to reach the consignee within a stipulated period, but a wreck that damaged the goods somewhat, and other unforeseen conditions beyond the control of the consignor, resulted in the arrival of the consignment behind time. The consignee not only refused to accept the goods, but instituted proceedings for damages, as stated, alleging breach of contract because of non-delivery on time, and also alleging that the goods were not packed as stipulated. In connection with the suit an attachment was levied on the consignment. McHenry had the lien released by the deposit of \$5000 cash in court and transferred the goods to another Philadelphia concern, brokers who realized for the consignor prices in excess of those the original consignees were to have paid.

### SUTTER.

**LIGHT YIELD OF LATE CHERRIES.**—Independent: Indications now are that the early varieties of cherries, such as Purple Guigne and Centennial, will be

very heavy in this section. The late varieties, known as the Black Tartarian and Royal Ann, will be light—not so light as some years, but below the average.

**LABORERS WANTED FOR THINNING FRUIT.**—Orchardists in this county are busy thinning the heavy crop of fruit. On the peach trees the fruit sets in rolls, like grapes on a vine. The work of thinning will be expensive, and hands for the work are in demand.

### TULARE.

**OLD TREES FOR FROST.**—Register: Capt. A. J. Hutchinson of Lindsay has noticed that oranges on the older trees were not so much affected by the frost as the fruit on the younger trees, the fruit on the trees ten to twelve years old being still in fine shape, while that on the younger trees was ruined by the cold weather. It seems to be about so with regard to fruit blossoms on deciduous trees, the older trees standing the frost much better than the young ones. The fact would seem to be established, though a very wide range of observation may be required to put it beyond dispute, but the reason why is not obvious. The one and two-year-old orange trees were also badly hurt by the cold, when older ones were not nipped to hurt at all.

**BRANDING AND VACCINATING.**—Orosi Offer: Lowrey Bros., when branding their calves a week or two ago, vaccinated them against blackleg at the same time. They claim economy in labor and a saving of vaccine matter by this method. Other cattle growers hereabouts are adopting the same method.

**LIGHT ACREAGE IN GRAIN.**—The area seeded to grain in this section this season is very much less than usual, and a considerable portion of this will fail to make grain. Here and there, however, are fields that will give big yields. J. R. Reed has a field of barley north of Orosi that it is estimated will turn off twenty bags to the acre. Edwin Thompson summer-fallowed a piece of land 1 mile north of Orosi early in the season, and last week reseeded forty acres of it and seeded the same to pumpkins.

### VENTURA.

**THE SUGAR BEET.**—A dispatch from Oxnard gives the following concerning the sugar beet crop: In preparation for the largest beet sugar campaign that the Oxnard factory has yet had, and which, it is expected, will open about August 1, considerable activity is manifest in and about the big sugar mill. A large plant for the purification of water is being put in. Fifteen new men have lately been put on outside work and the factory roll shows sixty-six men, all told. The Osmos process has been started to work up the old molasses left over from last year. Superintendent Williams is giving old employees preference in positions for the campaign, and no new application will be considered until June 1, after which time it will be first come, first served.

### YOLO.

**SUCCESSFUL ORANGE CULTURE.**—Woodland Democrat: T. D. Morrin has about 200 orange trees, mostly Navels, at the head of Capay valley, near Rumsey. Some of these trees have been planted ten years and a part of them only four or five. Last harvest the product was 300 boxes, which in the local market were worth \$2 a box. His first sales were about the middle of November, and by the 10th of January the entire crop was harvested, and that, too, without putting on the market any unripe fruit, as is so often done to get the advantage of early sales. This fruit was of large size, fine form and color and excellent quality. No finer oranges have been in our market, from whatever source they may have come.

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A Safe Speedy and Positive Cure  
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blisters from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or bluish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

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And light loads.

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Good for everything  
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## THE HOME CIRCLE.

## Music Everywhere.

Let me go where'er I will,  
I hear a sky-born music still:  
It sounds from all things old,  
It sounds from all things young,  
From all that's fair, from all that's foul,  
Peals out a cheerful song.  
It is not only in the rose,  
It is not only in the bird,  
Not only where the rainbow glows,  
Nor in the song of woman heard,  
But in the darkest, meanest things,  
There always, always something sings.  
'Tis not in the high stars alone,  
Nor in the cups of budding flowers,  
Nor in the redbreast's mellow tone,  
Nor in the bow that smiles in showers,  
But in the mud and scum of things  
There always, always something sings.

—Ralph Waldo Emerson.

## The Girl Who Laughs.

The girl who laughs—God bless her!—  
Thrice blesses herself the while;  
No music of earth  
Has nobler worth  
Than that which voices a smile.

The girl who laughs—life needs her;  
There is never an hour so sad  
But wakes and thrills  
To the rippling trills  
Of the laugh of a lass who's glad.

—John Howard Todd, in the Ladies' Home Journal.

## Slave and Saint.

"You'd not be all that of a scoundrel, Crawford?" said Tom Downing, after a minute's hesitation, during which he looked solemnly at his friend. Crawford Sands spent that minute in shrugging his shoulders and looking elsewhere. He wore an eyeglass. The thing helped him in moments like this.

"The word 'scoundrel' may be variously defined, old chap!" he said, after a further pause.

"By men who are scoundrels according to the common meaning of the word—only by them, Crawford."

"Thanks. Well, I'm off to meet Vinny. She's down from town this morning. I think I told you. I hope you'll help with the boat this afternoon."

"Crawford," said Tom Downing, "do be plucky, for God's sake, and your sister's."

The two young men faced each other, and it seemed for a moment as if the reckless expression was about to flit from the eyes of Crawford Sands. But he conquered the better impulse.

"Look here, Downing," he said, "it needn't make the least difference to you. You can make love to Vinny just the same, and she'll marry you fast enough whenever you like to ask her, or I don't—"

But, with a rush of crimson to his tanned cheeks, Tom Downing intervened.

"That'll do, Sands," he said, quietly; "it's my turn to say 'Thanks.'"

Then he left the room and the house and it wasn't until he ran against Caruthers, of Balliol, that he realized he was hatless.

He bought a cap in one of the shops, and got into a boat and had a paddle all to himself. And while he paddled he thought:

"Was it true that Vinny Sands would marry him 'fast enough whenever,' etc.?"

The idea thrilled him.

Yet what was the use of toying with the sweet hope in the present circumstances?

"Here am I, at Oxford, fighting for a degree, with all the world to fight afterward, and only a hundred a year to my name! Also, to some extent, I have poor Crawford's wild ways on my soul. If I had looked after him better he would never have got mixed up with that fast Dunlace lot. And to mend it all, I want Vinny Sands."

After this reflection he rowed more furiously still; and so it wasn't perhaps wonderful that by and by he was to be seen trotting back to the rooms he shared with Crawford Sands,

dribbling Thames water on to the pavement from several parts of him. Anyhow, he had managed to save from a watery grave the young counter jumper whom, in his mad career, he had so unfortunately spilled. It was thus that he shook hands with Vinny Sands on the landing of the lodging house. There was trouble in her pretty face, but it vanished quickly at the sight of him.

Crawford Sands laughed at the wet clothes.

"I'll tell you what it means, Vin," he said. "Tom tried to drown himself because I hinted that you were engaged to that Captain What's-his-name; but he thought better of it in the nick of time."

"Crawford!" cried Vinny.

"He's the same old feather brain, Miss Vinny," murmured Tom, warmed by the reproach in the girl's voice and the glorious color in her face. And then he went off to get presentable for luncheon.

The afternoon and evening that followed were full of emotion for Tom Downing and Lavina Sands.

Crawford had the good sense not to spoil his sister's pleasure. On the way to the station he had just hinted that he was in another little hole, but he had declined to be more explicit until later in the day. The sunshine and joyous April air of the river and the splendid green meadows and woods for the time charmed away Vinny's gnawing fears.

How much sweeter was this life than that of the Bayswater boarding house, in which she, a lone maiden, lived penurious days for her brother's sake! And how much more stimulating was the sight of Tom Downing, the thoughtful, strong and tender, than the Captain Marshall (a half-pay person), who, at Bayswater, made as much love to her over the joint as he dared!

Crawford was gay—so wildly gay, in fact, that the two others looked at each other with a certain terror, even while they had laughed at him.

Once Tom had a chance to get in a sober word or two. Crawford had gone off to a cottage for some milk, leaving them in the boat together.

He began by hoping that things at the boarding house were pleasanter than usual.

Then he plunged into an earnest entreaty that she would regard him as a lifelong friend; his income and eternal regard were hers.

"I don't understand you, Mr. Downing," Vinny whispered. "Are you thinking about Crawford's trouble, too?"

"Yours first, his secondly. I can never forgive myself that he was not kept straighter."

"You," she answered, "have nothing to reproach yourself for. Poor Crawford himself admits that if he had only been wise enough—Hush! here he comes!"

So it ended.

After dinner, by special request, the brother and sister were left alone. It made Tom's heart ache to think of this orphaned girl of one-and-twenty thus tackling the position of debt and disgrace which confronted her brother of twenty-two.

But it was worst of all in the morning.

There was no Crawford at the breakfast table. Tom and Vinny sat down to the meal together, and when it was over the girl explained things.

"He has committed forgery, Mr. Downing, and I have persuaded him to leave Oxford at once. He will live it down, I believe. I told him I was sure you would do what was necessary—to sell his books and things, and—"

Then she broke down, and before Tom quite knew what he was doing he had taken the girl in his arms and was comforting her as if she had been his own brave little sister.

This, however, could not last. With a miserable little smile, Vinny at length freed herself.

"Yes," she confessed, being urged. "I love you very much, Tom. So much that—but it's no use talking. Please go off to your lecture now. By and by, perhaps—"

However, there was no such by and by for Tom Downing. The brave little Vinny just left him a note to greet him at luncheon. There was no room in her life for love at present. Crawford's responsibilities were all-absorbing.

It was in vain that Tom Downing took train to London the next day and stormed the Bayswater boarding house. Vinny had left, bag and baggage, the previous evening.

Rather more than five years after he had thus lost Vinny, Tom Downing went under doctor's orders to St. Leonard's. He was paying the penalty of moderate literary success; the demands upon his brain had resulted in nervous breakdown.

The first house at which he applied for rooms could not accommodate him, but the landlady suggested that he should try next door. He did so—the name on a brass plate, Mrs. Wills, was as good or as bad as any other name. Here he was invited inside, while the maidservant sought information for him. The room he was in had an unusual air of refinement. But all in an instant Tom came near staggering, for on the mantelpiece was his own portrait in the Oxford days, and by its side Crawford Sands' portrait also. He was still absorbed in his heart's palpitations when the door opened and a matronly woman appeared.

"What brings that here?" he asked, so fiercely that the good woman started at him. He pointed at his own portrait.

"Really, sir, I believe it is the late Mr. Wills," she replied, almost frightened by his face.

"Nonsense! My name is Downing. It is my photograph," said Tom, "when I didn't wear a beard. Are you not Mrs. Wills?"

"Oh, no. I am the housekeeper. Mrs. Wills is in London. She and her brother are returning this evening. The other gentleman is her brother."

Then Tom fancied he understood the situation. So he had found Vinny at last. She was a boarding house keeper—her early experience at Bayswater was being turned to account. She had married, changed her nature altogether, and was now commonplace, mercenary, and—a widow!

"I was told you wanted rooms, sir!" inquired the woman, breaking his reverie.

"Shall I stay, or shall I not?" he asked himself.

He decided that he would.

He was very bitter all that day. Mrs. Wills had not come home by dinner time. He ate his own dinner and stared at the sea. So Master Crawford was nearly a qualified medical man—he had ascertained that. What a change must have been wrought in him also. He must have gone to the hospitals almost as soon as he disappeared from Oxford.

It was while he was thus staring at the sea that he saw Vinny herself and Crawford walking toward the house.

"I'll meet them. They shall have their pleasant surprise as sharp as possible," he said.

But he timed the meeting rather badly. The fact is, he lost his way in the house, which was a large one, and ere he was at the bottom of the stairs he heard Vinny's voice exclaim:

"Oh, Crawford, dear, it must be Tom; whatever shall I do?"

"Yes, it's Tom, sure enough, Mrs. Wills!" said Tom Downing from the stairs. He meant his tone to be at least commonplace.

Then with the sweetest look of sadness and appeal that was ever on a human face, Vinny sobbed out, "Oh, Crawford!" and fainted in her brother's arms.

The young doctor smiled oddly.

"It's all right, Mrs. Craig," he said to the housekeeper. "Don't you worry. Leave us alone. Lend a hand, Tom Downing, if you will condescend so far."

Tom did condescend. It thrilled him merely to touch the girl (she looked a girl still, in spite of all), and his heart was wild as he gazed at her on the sofa.

Crawford did what was necessary, and then turned to his old friend.

"She'll get round in about five min-

utes now," he said. "By George, what a situation!" And he laughed.

"Is there anything comical in it?" asked Tom, angrily.

"Rather, old man. That girl there is a living lie. Look at that ring on her finger. There never was any such person as the Mr. Wills it indicates. She married him for my sake, old chap. Wouldn't have been proper to run the lodging house else, she said. She's slaved and slaved between her duty to her customers and what she calls her duty to me. Talk about your medieval saints, they're not in it with her. And now, oh, lor! Just the one thing has happened that she prayed nightly, I believe, mightn't happen—you've turned up!"

"Does she detest me so much?" asked Tom lamely.

"No, the other thing, old fellow. And so if you would clear out quickly—she's coming round. Now then, Downing, what are you up to?"

But Tom was on his knees by Vinny's side, and was pressing her hands to his lips; and when she opened her eyes it was to look into his eyes.

She called her poor little deception an amazing crime; but so did not Tom, whose nervous breakdown left him from the moment when Vinny empowered him to summon Mrs. Craig and inform that good woman that the boarding house might, on certain easy conditions, be transferred to her.

## Extravagant.

When to the play I take Rosette  
We have a box!  
Ah, yes, I know I'm deep in debt,  
And sore with creditors beset,  
But Love has caught me in his net,  
And gayly mocks.

So there we sit, and look as bored  
As other swells;  
For, small as is my little hoard,  
Once in a while I can afford  
Two gallery seats, and one box stored  
With caramels!

—Clinton Burgess.

## Wagner's Domestic Life.

"Wagner, Minna and Cosima" is the title of a singularly attractive paper by Gustav Kobbe, which is published in the North American Review. It tells the pathetic tale of the relations which existed between the great composer and his first wife, Minna, who shared exiled, poverty and privation with her husband, slaving for him uncomplainingly, and striving to create little oases of cheer in the desert of despondency. She neither understood nor sympathized with his artistic aspirations, however; and after their separation there remained for her five years of lonely sadness. It was Cosima, filled with admiration for his gifts, who shared the happiness and glory of the brilliant success and recognition which at length crowned the lifework of Richard Wagner. Mr. Kobbe says:

"The history of art has no more beautiful union between kindred souls to chronicle than this. One who had ample opportunity to observe their everyday life says that Wagner adored Cosima and that she worshipped him. 'All his wishes were anticipated with an ingenuity known only to the unselfish love of woman. To her he could impart all his plans, talk over his projects, knowing that they would be appreciated.' Since death, early in 1883, sundered this happy union, she has devoted herself to the continuance of the Bayreuth festival plays. Her grief when Wagner died was profound and one act of hers over his coffin was as beautiful and touching as it was, I believe, unique. She cut off her long hair, which her husband had loved to have her wear loose over her shoulder, and placed it under his head as a cushion to be buried with him."

"I HAVE a great scheme," exclaimed the new clerk to the department store manager.

"What is it?" asked the manager, listlessly.

Why, to charge admission to our bargain sales!" replied the new clerk, enthusiastically.—Boston Post.



## Domestic Service in Chili.

Senorita Carolina Huidobro of Chili last week gave a lecture in Boston on the women of her country. Her account of the domestic service question is interesting.

"There are two kinds of cooks," she said. "Advertisements read: 'Wanted, a cook with bed inside' or 'Wanted, a cook with bed outside.' The latter sort of cook can always be had. Domestic prefer the 'bed outside,' because a cook who does not sleep in the house has more liberty. She does not begin quite so early in the morning, her mistress cannot get quite so much work out of her, and she can steal a little more, yet her services in the main are satisfactory. After dinner every evening the cook comes for orders as to the next day's meals. Even if unable to read, she will remember every item of an elaborate menu. She is given a certain amount of money to buy the provisions; for everything is bought in small quantities, just enough for one day. The cook will only cook; she will not wash the dessert dishes, for that belongs to the table girl's work; the table girl will not clean the knives, for that belongs to the 'boots.' The washing is all done out, and the clothes are brought back in from three days to five weeks.

"The laundress has most winning ways, and often brings her employer flowers and candy; but she asks for a dollar for soap for each washing, and has to be closely watched. Every servant who lives in the house brings her own bed and furniture. A girl from the country will arrive with only a thin mattress and one poor coverlet, and will leave at the end of three or four years with a cartload of goods that she has accumulated. When several servants are leaving at once, with their bedding and furniture, it looks as if the whole family were moving out.

"The women of Chili are not of mixed race. They are pure Spanish, and of the finest blood of Spain. They speak Castilian Spanish, and have the general characteristics of Spanish women. They are well educated, the daughters of the rich in private schools, the others in the public schools. The nation offers free education to both boys and girls, from the primary school clear through the university; and promising young men and women are afterward sent abroad to study from three to five years at government expense. One of the most distinguished physicians in Chili to-day is Dr. Ernestina Perez, a washerwoman's daughter, who showed so much talent as a child that she was educated in Europe by the State. In Chili no genius is lost to the world on account of poverty.

"Of late years, with the growth of educational facilities for women, zeal for education has sprung up. We have women doctors, lawyers, authors and newspaper correspondents. There were last year in the University of Chili thirty-eight women studying medicine, four studying dentistry and eight studying law. Of the eight law students, five did not mean to practice, but were taking a law course to enable them the better to manage their large properties."

## Odd Names.

Parents have much to answer for who, to display their shallow wit or gratify a passing whim, condemn their children to go through life labeled with absurd patronymics, the butt of every foolish punster, is the opinion of London Tit-Bits. It seems almost incredible that a man named Death should have two sons christened respectively "Jolly" and "Sudden"; yet this occurred during the last century. And those are not the only punning names to be found on the registers. We have Cannon Ball, Dunn Brown, River Jordan and many others.

The Americans, however, are still more given than ourselves to puns compounded of the baptismal name and the surname. One Robert New, an American, named his two sons, the first "Something" the second "Nothing." Price, we find, becomes Sterling

Price; Carrol, Christmas Carrol; Mixer, Pepper Mixer; Ware, China Ware; Peel, Lemon Peel; Gentle, Always Gentle.

Sometimes a punning name is merely the result of a coincidence. Mr. Corney Grain says the pun in his name is quite unintentional; and so, no doubt it was in the case of Dr. Field Flowers Goe, the bishop of Melbourne.

## Solved the Tramp Problem.

"I think I have solved the tramp problem in a perfectly satisfactory way," said the New Jersey farmer as the subject was under discussion. "It did no good whatever to put up signs warning them off or to keep a bulldog at the gate. I tried all that, and last spring I made a change. I put up signs for three miles around, reading 'Tramps Please Call at the Baker Farm,' and 'All Tramps Welcomed at Baker's,' and the result is that not over three of them have called. The other day, to show you how it works, a tramp came along and looked things over and said to me, 'Any constables hidden in the barn?'"

"Not a one," I replied.

"How many bulldogs have you got?"

"None at all."

"Got a lot of spring guns or bear traps set about the place?"

"Nothing of the kind."

"Has a feller got to do a day's work to get a meal?"

"No work at all. You come right in, and I will give you a square meal for nothing, and if you want to stay all night I'll give you the best bed in the house."

"He looked at me in a puzzled way for about a minute," continued the farmer, "and then indulged in a wink and said, 'You can't play that little game on me, old man. This is my sixteenth year on the road.'"

"But what game?" I asked.

"Putting poison in the milk and selling our cadavers to a medical college for five dollars apiece. Oh, no, Mr. Baker—not this eve!" —Baltimore Herald.

## Puffy Eyes.

Puffy places under the eyes most frequently signify some sort of kidney ailment. Half the women do not drink enough water to keep a canary bird healthy. Tea, coffee and chocolate will not take the place of water. Make it a practice to drink a big glassful half an hour before each meal and another two hours after each meal, and the puffy places will not only vanish, but your complexion will be clearer and your general health much improved.

"In your story of this wedding," criticised the city editor, "you say 'the bride led to the altar.' You should have written that she 'was led to the altar.'"

"Is that so?" retorted the new reporter, conscious of being on firm ground. "It happens that I knew that bride. She is 38 years old, and it is a cinch that she led all the way." —Baltimore American.

"RIMMER's having some success with his poems now, I believe."

"Nonsense! What makes you think that?"

"He told me that he was holding his own."

"Just so. He's just realizing that he might as well hold them as send them out anywhere." —Philadelphia Press.

CLARA—Bob Preston has proposed to me, and I really don't know how to refuse him. I hate to break the poor boy's heart.

Amy—Oh, don't worry about that, I refused him twice last week, and he seems to be getting along. —Chicago Record-Herald.

The parlor sofa holds the twain  
Miranda and her love-sick swain,  
Headshe.

But hark! a step upon the stair,  
And papa finds them sitting there  
He and she.

—Philadelphia Press.

## DOMESTIC ECONOMY.

## Domestic Hints.

LEMON PUDDING.—To three pints of boiling milk add one tablespoon corn-starch dissolved in cold milk, the juice and grated rind of two lemons, three tablespoons of sugar and a lump of butter. Stir constantly till thick, remove from fire, add four well-beaten eggs. Turn into moulds. Serve cold with cream and sugar.

SWEETBREADS WITH TRUFFLES.—Blanch the sweatbreads and cool them under a press. Then cut into slices and cook, without browning, in butter. When done, add a little white wine to them. Lift out the sweetbreads, arrange them in a circle, heat some truffles chopped in the butter in which they were fried, pour these into the center of the dish, and send to table.

STEWED RHUBARB.—Wash the rhubarb, peel it and cut into pieces one inch long. Rhubarb should always be cooked in a double boiler. Put in two tablespoonfuls of cold water and one quart of cut rhubarb. Let this cook until the rhubarb is soft, and sweeten to taste. Some persons do not like the full flavor of the rhubarb, and add two cups of water to render it less sharp. When this is done more sugar should be added.

OLD FASHIONED COUGH CANDY.—Pour over a gill of whole flaxseed half a pint of boiling water. In another dish, holding a cup of slippery elm, pour also enough boiling water to cover. Let these stand for two hours, then strain into a porcelain kettle containing a pound and a half of granulated sugar, wet with the juice of two lemons. Press the strainer holding the seed and elm in order to get their healing substances. Boil the mixture till it candies, and then pour it on pans on which buttered paper has been spread.

CRANBERRY JELLY.—One quart of cranberries, one pint of granulated sugar and half a pint of water. Cook the cranberries in the water for twenty minutes. Then rub through the sieve and add the sugar. Cook ten minutes longer. Do not add more or less of the sugar, or the jelly will not mould. The time during which an article is coming to the boiling point cannot be counted by any rule. The moment the liquid has cooked ten minutes turn it into a mould and set in a cool place for twelve hours or more. Cranberries should be cooked in porcelain.

POTATO PUFFS.—Two cupfuls of mashed potatoes, two teaspoonfuls of butter, two eggs, one cupful of cream and salt and pepper to season. Beat the eggs until light, and after melting the butter stir it into the eggs. Beat this mixture into the mashed potatoes, then add the cream and seasoning, and beat the whole until light. Grease popover pans or gem pans, and have each half full of the mixture. Bake the puffs in a quick oven until brown, and remove them from the pans with a flexible knife to prevent their breaking. They should be served immediately upon being removed from the oven.

MIXED FRUIT SALAD.—This is made of one pineapple, four bananas, the yolks of four eggs, three oranges, one cup of powdered sugar and the juice of two lemons. Peel the pineapple, remove the "eyes," cut out the core and shred the remainder, cut the peeled and seeded oranges into small pieces and slice the bananas. The yolks of the eggs should be beaten until light and frothy, then the powdered sugar may be gradually added, and the lemon juice must be beaten in last. Arrange the fruit in a deep glass dish, first a layer of fruit, then one of dressing, alternately. This salad should be made at least an hour before required, and placed on ice to become thoroughly cold.

RHUBARB JELLY.—To the recipe for pineapple whip, before removing from the fire, add one box of granulated gelatine, which has been softened in two cupfuls of tepid water. Stir the mixture while heating, and add extra

sugar to taste. When it is just about to boil remove from the fire, and pour into ring moulds that have been rinsed with cold water. When the mixture has cooled put it on ice to become firm. Sweeten one pint of cream, flavor with vanilla, and whip until it is stiff. Turn the jelly border into a glass dish, fill the center with whipped cream, and serve. A simple way of preparing rhubarb with cream is to take three parts of stewed rhubarb to one part of rich cream, and mix the whole just before serving. The rhubarb should be ice cold before the cream is added. Some persons press the hot rhubarb through a sieve when preparing it for this dessert.

## Hints to Housekeepers.

Parsley eaten with vinegar will remove the unpleasant effects of eating onions.

Do not scrub a porcelain or enameled bathtub with any soap containing sand. It thins and cracks the enamel, and rust and stains result. A preparation for the purpose of restoring and cleaning tubs that have been changed in this way may be obtained at large department stores.

It is somewhat risky for one to experiment with varnishes and furniture polishes, especially when a fine piece of old mahogany is at stake. It is usually worth attention of a professional furniture restorer, as each piece, owing to its age or conditions that it has survived, requires special attention.

One of the prettiest and newest table decorations for a formal dinner is to have a large basket made the same shape as the table, leaving room at the edge for the plates. Fill this basket with ferns of different varieties, and have a wreath of ferns around the edge of the table, dotted with flowers in stem glasses and glass or silver candlesticks with white candles and silver-paper shades. One beautiful decoration is an immense center basket of pink begonias and ferns, and a short distance from the center a wreath of smilax with begonias in stem glasses and candles with pink shades. Have your fruits, bonbons, salted or glazed almonds on the table in low dishes of cut glass. Red is a pretty, warm color for a dinner.

The proper way to clean the teeth is to brush from the gums downward for the upper teeth, and from the gums upward for the lower teeth. By this method the bristles go between the teeth, as well as cleaning the front and sides. Remember that the inside of the teeth requires more careful cleaning than the part which shows. The most important cleaning of the day is the one which takes place before going to bed. No vestige of food should be allowed to cling to a tooth during the night, as this induces decay, says the Chicago Chronicle. To keep the teeth in perfect condition, they should be cleaned after each meal. Any acid like vinegar will dissolve the lime of the teeth and destroy their solidity. A pleasant mouth wash, when the mouth is a little sore, is made by shaking up a few drops of tincture of myrrh in a little warm water. It is also useful for sweetening the breath.

He lies who claims he says just what  
He thinks, because man never  
Speaks out his inmost honest thought  
About his own endeavor.

—Chicago Record-Herald.

"WHAT makes Mrs. Smith so energetic lately? I met her at seven this morning hurrying through the street, and saw her going home in a cab at midnight yesterday."

"Oh, she's hustling her dressmaker and hurrying her milliner. You see she is going South for the benefit of her health."

MRS. TILFORD OF SOROSIS: It must have taken Daniel Webster a long time to compile the dictionary. Don't you think so? Telford: Daniel! You mean Noah, don't you? Mrs. Telford (tartly): Now don't be silly. Noah built the ark!



# S. F. Market Report.

## Produce Market.

SAN FRANCISCO, May 14, 1902.

### CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July.	Sept.
Wednesday.....	75 3/4 @ 74	74 3/4 @ 73
Thursday.....	74 3/4 @ 74	73 3/4 @ 72 3/4
Friday.....	75 @ 74 3/4	73 3/4 @ 73 3/4
Saturday.....	74 3/4 @ 75 1/4	73 3/4 @ 74 1/4
Monday.....	75 1/4 @ 76 1/4	74 3/4 @ 74 3/4
Tuesday.....	75 3/4 @ 76 1/4	74 3/4 @ 75 1/4

### CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday.....	34 1/4 @ 33 1/4	29 1/4 @ 28 3/4
Thursday.....	33 1/4 @ 34 1/4	28 3/4 @ 29 1/4
Friday.....	34 1/4 @ 34 1/4	29 @ 29 1/4
Saturday.....	34 1/4 @ 35 1/4	29 1/4 @ 29 3/4
Monday.....	35 @ 35 1/4	29 3/4 @ 30
Tuesday.....	34 1/4 @ 35 1/4	29 1/4 @ 29 3/4

### SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 09 3/4 @ 1 10	1 09 3/4 @ 1 10
Friday.....	1 12 1/4 @ 1 12	1 10 3/4 @ 1 10 3/4
Saturday.....	1 12 1/4 @ 1 12	1 10 3/4 @ 1 10 3/4
Monday.....	1 12 1/4 @ 1 13	1 12 1/4 @ 1 11 3/4
Tuesday.....	1 13 1/4 @ 1 14	1 11 1/4 @ 1 12
Wednesday.....	1 14 1/4 @ 1 14	1 13 @ 1 12 3/4

### WHEAT.

The market for this cereal has inclined against buyers in this center during most of the week under review, but business has continued slow and gives promise of being light during remainder of the season. Exporters are doing very little at present in the way of chartering vessels for grain loading, although there is a fair supply of disengaged deep-sea tonnage in harbor suitable for carrying wheat. Ocean freight rates remain quotably about the same as for several weeks past, viz., 23s 9d to 25s for large to medium sized iron ships to Europe, usual option as to final port of destination. Under free chartering, firmer figures would probably have to be paid, as owners of most of the ships open to charter are inclined to wait for new crop, now close at hand, expecting to find a firmer rather than an easier freight market when new wheat begins to arrive at tidewater in wholesale quantity. Much will depend on the course of foreign markets, and also on how the crop turns out here. While prospects on this coast are for a crop above the average, the outlook in the great wheat belt of the United States east of the Rockies is far from encouraging. Should Europe require as much American wheat as she has taken in many previous seasons, better average prices should be realized than have prevailed during recent years. The local market closed quiet, but firm at the advanced quotations.

California Milling.....	1 15 @ 1 17 1/4
Cal. No. 1 shipping, alongside.....	1 12 1/4 @ 1 13 1/4
Oregon Valley.....	1 12 1/4 @ 1 13 1/4
Washington Blue Stem.....	1 12 1/4 @ 1 17 1/4
Washington Club.....	1 10 @ 1 12 1/4
Off qualities wheat.....	1 07 1/4 @ 1 10

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	65 2d @ 65 3/4d	65 5d @ 65 5 1/4d
Freight rates.....	35 @ 36 1/4s	23 3/4 @ 25s
Local market.....	98 3/4 @ 1 01 1/4	1 12 1/4 @ 1 13 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

### CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.12 1/4 @ 1.14.
December, 1902, delivery, \$1.09 1/4 @ 1.13.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.13 @ 1.12 1/2; May, 1902, \$1.14 1/2 @ 1.14.

### FLOUR.

Spot stocks have been heavier at numerous times in the past than at this date, but there is enough offering to accommodate the existing demand. Trade is of very fair volume, both for shipment and on local account. Values are being in the main well sustained. For a few favorite marks, going mostly to special trade, there is a disposition to exact slightly higher figures than have been lately current.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

### BARLEY.

The firm condition of the barley mar-

ket, so far as relates to feed descriptions, which was noted as prevailing at date of last review, has continued into the current week. There is little low-grade barley obtainable, and much which would ordinarily be taken readily for brewing or export is being absorbed on local account for feed. Prices are in consequence showing a very narrow range, as exporters and brewers refuse to pay little if any more for the ordinary variety of barley than millers are paying for this cereal to accommodate the existing demand for crushed or rolled barley. In Chevalier there is practically nothing doing, and quotations for the same are for the time being largely nominal.

Feed, No. 1 to choice.....	98 3/4 @ 1 00
Feed, fair to good.....	95 @ 97 1/2
Brewing, No. 1 to choice.....	98 3/4 @ 1 02 1/4
Chevalier, No. 1 to choice.....	1 10 @ 1 20
Chevalier, poor to fair.....	95 @ 1 05

### OATS.

Demand has been fairly active the greater part of the past week, causing a firmer tone to prevail, more particularly for white oats, which description received the most attention. Inquiry was both for shipment and home use. Offerings are not particularly heavy of oats of any sort.

White Oats, fancy feed.....	1 42 1/4 @ 1 45
White, good to choice.....	1 35 @ 1 40
White, poor to fair.....	1 30 @ 1 32 1/4
Gray, common to choice.....	1 30 @ 1 37 1/4
Milling.....	1 40 @ 1 42 1/4
Surprise, good to choice.....	1 40 @ 1 45
Black Russian.....	1 15 @ 1 27 1/4
Red.....	1 22 1/4 @ 1 37 1/4

### CORN.

Supplies and offerings are of very moderate volume, especially of desirable qualities, thoroughly sound, clean and dry. For choice to select the market is firm at full rates quoted. Damp and defective corn is not in request, and sells at such irregular prices as not to be quotable.

Large White, good to choice.....	1 50 @ 1 55
Large Yellow.....	1 42 1/4 @ 1 47 1/4
Small Yellow.....	1 45 @ 1 50

### RYE.

Asking figures were advanced about 50c per ton, but demand was not brisk at the higher rates demanded. Offerings are of only moderate volume.

Good to choice.....	92 3/4 @ 97 1/4
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### BUCKWHEAT.

Same inactivity as previously noted. In a wholesale way there is nothing doing and very little jobbing trade. Values remain nominally as before.

Good to choice.....	1 55 @ 1 70
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### BEANS.

There has been no active trading in the bean market since last review, and no radical changes in quotable values. Offerings are not heavy of any sort, and especially are spot stocks light of varieties other than Lady Washingtons, Small Whites and Pinks. At the extreme figures recently established for these kinds it is difficult to secure noteworthy custom. Trading in most other beans is necessarily confined to light jobbing operations, owing to limited supplies.

Pea, fair to good, 100 lbs.....	3 25 @ 3 50
Small White, good to choice.....	2 40 @ 2 50
Lady Washington.....	2 40 @ 2 50
Pinks.....	2 10 @ 2 20
Bayos, good to choice.....	3 00 @ 3 10
Reds.....	2 25 @ 2 50
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	3 50 @ 3 60
Black-eye Beans.....	4 50 @ 4 75
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

### DRIED PEAS.

Scarcely anything doing in dried peas of either the Blue or Niles varieties, and such transfers as are affected are almost wholly of a jobbing sort. Quotations are unchanged, but are based mainly on asking figures or the views of holders.

Green Peas, California.....	1 50 @ 2 00
Niles Peas.....	1 75 @ 1 80

### WOOL.

There is no activity to report in the local market, but a change for the better is looked for in the near future. It is customary for large manufacturers and heavy dealers to hold off until the season's clip is well in, so as to be given ample opportunity to make selections. Manufacturers are taking advantage of the strikes among woolen mill employees East to talk down the market as much as possible before they commence buying, but that they will succeed in materially bearing values of desirable wools is not considered probable.

### SPRING.

Northern Cal., free.....	15 @ 16 1/4
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13

Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	12 @ 15

### HOPS.

The local market presents no new features, being exceedingly dull and uninteresting. Efforts of dealers to contract choice new to arrive at 12c are not being attended with any noteworthy success, the majority of growers preferring to wait and take chances, being satisfied that they can lose little or nothing by so doing. In the way of transfers here of 1901 hops from growers' hands, there is no evidence of anything doing. A New York review sizes up the situation there as follows: "The market has been devoid of special features all the week. There has been a light demand from all sources and much of the time so little business was accomplished that the situation was more or less nominal. Some deliveries have been made to brewers, mainly against positive needs, but there has been no disposition to enter into negotiation on new business. The limited trading has not, however, changed the views of dealers who are carrying stocks; they feel that the position is solid and with warmer weather the brewing season will get into full swing, which in turn will make more demand for hops. There is, therefore, no disposition to hurry matters, particularly if any shading of values is necessary to effect sales. When buyers want stock they do not object to the rates now ruling, 15c@19c for common to choice. The relative scarcity of State hops gives them a stronger position than Pacifics. No change in crop prospects on this side of the water, and very meager reports have been received as yet from Europe."

### HAY AND STRAW.

While the market for hay remains quotably about the same as at date of last report, the general tendency has been more in favor of the buying than of the selling interest. Buyers are operating lightly as a rule, and only to cover most immediate needs, as is ordinarily the case at this time of year. Stocks of 1901 crop in the region tributary to San Francisco are reported at 30,000 tons, as against 25,000 tons a year ago and 75,000 tons two years ago.

Wheat, good to choice.....	9 00 @ 11 50
Wheat and Oat.....	8 50 @ 11 00
Oat, good to choice.....	8 00 @ 10 50
Barley.....	7 50 @ 9 00
Alfalfa.....	8 00 @ 10 50
Clover.....	7 00 @ 8 50
Compressed.....	9 00 @ 11 50
Straw, 3/4 bale.....	40 @ 50

### MILLSTUFFS.

Asking figures for most descriptions of mill offal are still at a high range, with stocks of slim volume, but the demand is quite limited and the market cannot be termed firm. Current values on Rolled Barley and Milled Corn are being well maintained.

Bran, 1/2 ton.....	17 50 @ 13 50
Middlings.....	19 00 @ 21 00
Shorts, Oregon.....	17 50 @ 19 00
Barley, Rolled.....	20 50 @ 21 50
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

### SEEDS.

The market for most descriptions of seeds quoted herewith is exceedingly quiet, stocks and offerings being too light to admit of any noteworthy activity. Sales effected are principally of a jobbing character, and in the main at quotably unchanged values.

	Per ctt.
Alfalfa, Cal.....	— @ —
Alfalfa, Utah.....	— @ —
Flax.....	2 25 @ 2 50
Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 50 @ 2 65
Canary.....	3 1/4 @ 3 1/2
Rape.....	1 1/4 @ 2 1/4
Hemp.....	3 1/4 @ 3 1/2

### BAGS AND BAGGING.

There are no changes to report in Grain Bag quotations, but market is firm at prevailing values. There is little or no probability of easier prices being current this summer, unless it be late in the season. Market for Wool Sacks is quiet at previously quoted figures. In Fruit Sacks and Bean Bags there is nothing doing.

Calcutta Grain Bags, buyer June-July.....	6 1/4 @ 6 1/2
Calcutta Grain Bags, spot.....	6 @ 6 1/2
San Francisco Grain Bags, 22x36, spot.....	6 @ 6 1/2
San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	31 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	3 1/4 @ —
Gunnies.....	— @ —
Bean Bags.....	5 1/4 @ 5 1/2
Fruit Sacks, cotton, three sizes.....	5 1/2, 6, 6 1/2
Fruit Sacks, Jute.....	7 @ 7 1/2

### HIDES, PELTS AND TALLOW.

The Hides now arriving are showing better average condition than for some time past and are in better favor with buyers, market being moderately firm at ruling rates. Pelt market is quiet and is not noteworthy for firmness, although values are without quotable change. Tal-

low is in moderate demand at practically same figures last quoted.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10 1/4 @ —	8 1/4 @ —
Medium Steers, 43 to 56 lbs.....	9 1/4 @ —	8 @ —
Light Steers, under 43 lbs.....	8 1/4 @ —	7 1/4 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	7 1/4 @ —
Light Cow Hides, under 50 lbs.....	8 1/4 @ —	7 1/4 @ —
Stags.....	6 1/4 @ —	— @ —
Wet Salted Klp.....	8 @ —	7 @ —
Wet Salted Veal.....	9 @ —	8 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ —	14 @ —
Dry Klp and Veal, 11 to 16 lbs.....	14 @ —	12 @ —
Dry Calf, under 4 lbs.....	17 @ —	15 @ —
Salted Horse Hides, large.....	2 75 @ —	— @ —
Salted Horse Hides, medium.....	2 25 @ —	2 50 @ —
Salted Horse Hides, small.....	1 25 @ —	— @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, medium.....	1 50 @ —	— @ —
Dry Horse Hides, small.....	1 00 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 3/4 skin.....	80 @ —	61 20 @ —
Pelts, medium, 3/4 skin.....	50 @ —	75 @ —
Pelts, short wool, 3/4 skin.....	30 @ —	50 @ —
Pelts, shearing, 3/4 skin.....	15 @ —	30 @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good medium.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/4 @ —	— @ —
Tallow, No. 2.....	4 1/4 @ —	4 1/4 @ —
Goat Skins, perfect.....	30 @ —	37 1/4 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

### HONEY.

Spot stocks are not of heavy volume, but there is more offering than can be accommodated with prompt custom at full current rates. Business now doing is mostly of a light jobbing character on local account.

Extracted, White Liquid.....	5 @ —
Extracted, Light Amber.....	4 1/4 @ —
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	10 1/2 @ —
Amber Comb.....	7 @ 10
Dark Comb.....	6 @ 7

### BEESEWAX.

Supplies are of small proportions. There is fair inquiry and desirable qualities are readily placed at full current figures.

Good to choice, light, 3/4 lb.....	25 @ 28
Dark.....	24 @ 25

### LIVE STOCK AND MEATS.

Market for Beef has not changed materially since last review, but tendency was to slightly casior rates. Mutton has been selling at much the same figures as preceding week, but firmness of the market was confined principally to Wethers of desirable size and in fine condition. Lamb was in fair receipt, with tendency to easier figures. Veal was not in heavy supply and choice met with a good market. Receipts of Hogs showed some increase, giving the market a little easier tone, but there was no appreciable decline in prices, and no great changes are looked for in the near future.

Beef, first quality, dressed, net 3/4 lb.....	7 @ 7 1/4
Beef, second quality.....	7 @ —
Beef, third quality.....	6 1/4 @ —
Mutton—ewes, 2 @ —; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 125 to 200 lbs.....	6 1/2 @ 6 3/4
Hogs, small, fat.....	6 1/2 @ 6 3/4
Hogs, large, hard, over 200 lbs.....	6 1/2 @ 6 3/4
Hogs, soft or acorn fed.....	5 1/4 @ —
Hogs, country dressed.....	7 1/4 @ 8
Veal, small, 3/4 lb.....	8 @ 9 1/4
Veal, large, 3/4 lb.....	8 @ 9
Lamb, spring, 3/4 lb.....	9 1/4 @ 10

### POULTRY.

While there have been no radical changes, either in quotable rates or general tone, the market as a rule has shown slightly worse condition, as compared with a week or two preceding. Eastern stock was not in very heavy receipt, but there was enough imported arrived to keep prices for the ordinary run of offerings of home product at a low range. Large and fat fowls were the only sort specially sought after, such selling to fair advantage, both young and old, the former naturally receiving the preference and commanding the best figures.

Turkeys, dressed, choice.....	— @ —
Turkeys, alive, Hens, 3/4 lb.....	14 @ 15
Turkeys, alive, Gobblers, 1 lb.....	13 @ 14
Hens, California, 3/4 dozen.....	3 50 @ 5 00
Roosters, old.....	4 00 @ 4 50
Roosters, young (full-grown).....	6 00 @ 6 50
Fryers.....	4 50 @ 5 50
Broilers, large.....	3 00 @ 4 00
Broilers, small to medium.....	1 50 @ 2 50
Ducks, old, 3/4 dozen.....	4 00 @ 4 50
Ducks, young, 3/4 dozen.....	4 50 @ 6 00
Geese, 3/4 pair.....	1 25 @ 1 50
Goslings, 3/4 pair.....	1 75 @ 2 25
Pigeons, old, 3/4 dozen.....	1 75 @ 2 00
Pigeons, young.....	1 75 @ 2 00

### BUTTER.

There is a fairly active demand, mainly for stock to pack or to place in cold storage against future needs. Values remain virtually as last quoted. A few favorite marks are commanding in a limited way



from special custom a moderate advance on quotations.

Creamery, extras, #10.....	20 @—
Creamery, firsts.....	19 @—
Dairy, select.....	19 @—
Dairy, firsts.....	18 @—
Mixed store.....	16 @17

#### CHEESE.

Stocks of new domestic are sufficiently liberal to impart a weak tone to the market, with demand at present not very active. Choice old cheese is not plentiful and is commanding fully as good figures as lately current for this description, but trade in same is mostly of a small jobbing order.

California, fancy flat, new.....	9 @10
California, good to choice old.....	10 @11
California, fair to good.....	8 1/2 @ 9
California, "Young Americas".....	9 @11

#### EGGS.

The advanced figures last quoted for eggs arriving direct from hennery and ranch have caused offerings of this description to move more slowly, and in some instances it has been necessary to grant buyers decided concessions to prevent accumulations. Most of the store-gathered eggs are still showing good average quality, and many buyers are giving these the preference at the lower figures.

California, select, large, white and fresh.....	17 1/2 @18
California, select, irregular color & size.....	16 1/2 @17
California, good to choice store.....	15 1/2 @16 1/2

#### VEGETABLES.

The market for most kinds of fresh vegetables now in season inclined in favor of the buying interest, especially for other than strictly choice to select qualities. Asparagus of common grades was plentiful and considerable quantities of No. 2 went to canners as low as 90c. per box. String Beans were in fair receipt and materially lower, a large percentage of present consignments being from Winters and Vacaville section. Tomatoes continued in light supply and were mostly Mexican product, asking prices for which were advanced. Choice old Onions were rather scarce and in a small way brought tolerably stiff figures, Australian being held up to \$3.75 per cental in a small way. New Onions were in increased receipt, and market for same was slow and weak.

Asparagus, #1 box.....	100 @2 00
Beans, String, #10.....	3 @ 7
Beans, Wax, #10.....	3 @ 6
Cabbage, choice garden, #100 lbs.....	50 @—
Cucumbers, per doz.....	40 @1 00
Egg Plant, Los Angeles, #10.....	10 @ 12 1/2
Garlic, #10.....	— @—
Onions, Yellow Danver, #1 cental.....	2 75 @3 15
Onions, New Red, #1 cental.....	75 @1 00
Peas, Sweet garden, #10.....	2 @ 2 1/2
Peppers, Green, Los Angeles, #10.....	8 @ 12 1/2
Rhubarb, #1 box.....	40 @1 00
Summer Squash, #1 box.....	75 @1 00
Tomatoes, #1 box.....	1 50 @2 00

#### POTATOES.

Values for old potatoes were not so well maintained as during preceding week, the demand being less active and offerings were ahead of immediate requirements. Much of the local trade is switching off to new potatoes, prices for the latter having been lately about as favorable for consumers as were values for desirable qualities of old. Sales of old Burbanks over \$2.00 were the exception, and the quality had to be A1 to readily command this figure in a wholesale way. There is some inquiry for Burbanks for seed, but at a rather low range of values, not to exceed \$1.60 per cental, unless in a small way. New are showing increased receipt and improved quality, the quotable range continuing about as last noted.

River Burbanks in sacks, #1 cental.....	1 55 @1 80
Petaluma and Tomales Burbanks.....	— @—
Oregon Burbanks.....	1 90 @2 10
River Reds.....	1 40 @1 50
New Potatoes, #10.....	2 1/2 @ 2 1/2
Sweets, Merced, #1 cental.....	— @—

#### The Fruit Market.

#### FRESH FRUITS.

A few Apricots of the Pringle variety arrived Monday from Arizona and were placed at \$3.50 per crate, these fancy figures being realized in consequence of the fruit being the initial shipment the current season of this variety. Gooseberries put in an appearance from San Leandro, but not in sufficient quantity to be quotable in a regular way. Cherries were in free receipt and materially lower, with market especially weak for ordinary qualities, the bulk of offerings being under choice. Strawberries were in liberal supply, both in chests and crates, and market for same inclined in favor of consumers, the quotable range showing a marked reduction from the figures of preceding week. Apples continue to be offered out of cold storage at much the same figures as previously quoted, but this fruit is not meeting with much attention, other and more reasonable and cheaper fruit receiving

the preference of most retailers and consumers.

Apples, #1 fancy, 4-tier box.....	2 25 @2 50
Apples, good to choice, #50-lb. box.....	1 50 @2 00
Apples, common to fair, #50-lb. box.....	1 00 @1 25
Cherries, fair to choice, #10 box.....	50 @ 1 00
Strawberries, Longworth, #1 chest.....	4 00 @7 50
Strawberries, Melinda, #1 chest.....	3 00 @5 00
Strawberries, per crate.....	75 @ 1 00

#### DRIED FRUITS.

The general features of the market for evaporated and dried fruits have not changed materially since date of last review. Considering the advanced date in the season and the light quantities of most kinds now remaining, there is a very fair movement from jobbers on local account and in assorted cars going East. Especially are Apples in light stock and are bringing decidedly stiff prices, sales of choice evaporated in 50-lb. boxes being noted in a small way up to 11 1/2c. Sundried Apples in sacks, both sliced and quartered, are so scarce as to be hardly quotable, but are salable at figures correspondingly as stiff as the values now ruling on evaporated. There is prospect of the coast supply proving inadequate for the demand during the balance of the season, even at high prices. Eastern dealers are making inquiries in this market, with a view of replenishing to some degree their low stocks of Apples, but with no satisfactory results, as dealers here fear the necessity of importing or having a bare market before new crop will be available. For prime New York evaporated Apples, October-November delivery, 6 1/2c. continues to be asked. Values for spot Apricots, Peaches and Plums remain practically as last quoted, with market firm at the prevailing figures. Asking prices for new Apricots to arrive are as before noted, 6 1/2 @7 1/2c. for carload lots of prime to choice in sacks, with 7c. an inside figure for Vacaville stock. Prune market is quiet for both last year's fruit and 1900 product, but values remain steady, especially for last crop. The coming yield will undoubtedly be comparatively light in this State, as also in Oregon and Washington. It is doubtful if the California yield this season will aggregate 50,000 tons, while early estimates were nearly double this quantity.

#### EVAPORATED OR BLEACHED.

Apricots, Royal, choice, in sacks, #10.....	9 @10
Apricots, Moorpark.....	10 @12
Apples, in 50-lb boxes, rings, pressed, fancy.....	11 @11 1/2
Apples, 50-lb boxes, rings, pressed, good to choice.....	10 @10 1/2
Nectarines, #10.....	5 @ 6
Peaches, unpeeled, choice.....	6 1/2 @ 7 1/2
Peaches, peeled, in boxes.....	12 @14
Plums, Red and Black, pitted.....	5 @ 6
Plums, White and Yellow.....	5 @ 6
Prunes, 4 sizes, in bags, —@—c; 50-60s, 4 1/2 @4 3/4 c; 60-70s, 4 @4 1/4 c; 70-80s, 3 1/2 @3 3/4 c; 80-90s, 3 @—c; 90-100s, 2 1/2 @—c;—these figures for 1901 crop.	

#### COMMON SUN-DRIED.

Apples, sliced.....	6 1/2 @—
Apples, quartered.....	6 @—
Peaches, unpeeled.....	6 @ 6 1/2
Pears, prime halves.....	5 @ 5 1/2
Plums, unpitted, #10.....	1 1/2 @ 2 1/2

#### RAISINS.

The movement is slow, as has been generally the case at corresponding date in previous years. There are no very heavy offerings, however, and the limited jobbing business being transacted is at generally unchanged values. Seedless Raisins are practically out of stock.

Following are the prices for 1901 crop in carload lots:	
Loose Muscatels—	Per lb.
4-crown.....	6 1/2 @—
3-crown.....	5 1/2 @ 6
2-crown.....	5 1/4 @ 5 1/2
Seedless Sultanas.....	— @—
Thompson's Seedless, bleached.....	— @—
Seeded—	
1-lb. carton.....	7 1/2 @ 8
12-oz carton.....	6 1/2 @ 6 1/2
London Layers, 20-lb. boxes—	
2-crown.....	1 30 @1 40
3-crown.....	1 40 @1 50

#### CITRUS FRUITS.

Demand for oranges is not brisk, the early Summer fruit coming forward receiving more attention. A few choice to select oranges are bringing tolerably good figures, as compared with prices lately ruling, but for the general run of offerings the market is slow and lacking in firmness. Lemons are offering in excess of immediate demand. The limited inquiry which exists is mainly for most select, common qualities meeting with poor custom at low figures. Limes continue quotably as last noted, with no scarcity of supplies.

Oranges—Navels, #1 box.....	1 25 @2 25
Mediterranean Sweet.....	1 50 @2 25
Seedlings, #1 box.....	1 00 @1 75
Tangerine, quarter box.....	75 @1 25
Lemons—California, select, #1 box.....	2 25 @2 50
California, good to choice.....	1 50 @2 00
California, common to fair.....	1 00 @1 50
Grape Fruit, #1 box.....	75 @2 00
Limes—Mexican, #1 box.....	4 00 @4 50

#### NUTS.

Almonds and Walnuts are in slim supply, stocks admitting only of small job-

bing operations. Market for both is ruling firm at rates quoted. Peanut market is ruling steady, with trade light and mostly of a jobbing character.

California Almonds, shelled.....	16 @19
California Almonds, paper shell, #10.....	12 @13
California Almonds, soft shell.....	9 @10
California Almonds, hard shell.....	5 @ 6
Cal. White Walnuts, No. 1 soft shell.....	12 @13
Cal. White Walnuts, No. 2 soft shell.....	10 @11
Cal. White Walnuts, No. 1 hard shell.....	10 @11
Cal. White Walnuts, No. 2 hard shell.....	7 @ 8
Peanuts, California, fair to prime.....	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.....	5 1/2 @ 6
Pine Nuts.....	5 @ 6

#### WINE.

Very little doing in the wholesale wine market, and where pressure is exerted to realize on offerings from first hands, it is impossible to obtain full figures lately quoted as nominally current. Dry wines of last year's vintage and of fairly good quality, both red and white, are reported offering at 21c per gallon aboard cars, and San Francisco deliveries could probably be obtained as a concession on same wines at the price above named. Most of the smaller dealers here have now nearly as much wine as they have cooerage for, and the large handlers are making no special efforts to purchase, so there is for the time being little or no competitive bidding. The quotable range of wholesale values for dry wines of last crop may be said to be 20 @25c per gallon, but if there was an active demand, higher figures would likely have to be paid.

#### Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, #1 sacks.....	116,554	5,795,746
Wheat, centals.....	22,625	9,350,865
Barley, centals.....	106,682	6,034,755
Oats, centals.....	2,469	769,741
Corn, centals.....	5,155	114,502
Rye, centals.....	200	268,011
Beans, sacks.....	18,688	686,127
Potatoes, sacks.....	18,723	1,286,810
Onions, sacks.....	1,854	186,085
Hay, tons.....	3,166	130,863
Wool, bales.....	3,757	66,246
Hops, bales.....	1	8,880

#### EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, #1 sacks.....	84,152	3,964,298
Wheat, centals.....	24,775	8,673,230
Barley, centals.....	67,256	4,279,088
Oats, centals.....	3,816	49,101
Corn, centals.....	62	10,094
Beans, sacks.....	154	23,800
Hay, bales.....	553	14,953
Wool, pounds.....	866,854	1,081,218
Hops, pounds.....	1,043	502,287
Honey, cases.....	11	6,090
Potatoes, pack's.....	221	46,982

#### California Dried Fruit at New York.

NEW YORK, May 14.—Evaporated apples, common, 7 @9c; prime wire tray, 9 1/2 @9 1/2 c; choice, 9 1/2 @10 1/2 c; fancy, 10 1/2 @11c. California Dried Fruits.—Stocks of 1901 fruit cleaned up at generally steady figures. Apricots, 3 1/2 @6c. Peaches, boxed, 10 1/2 @14c; bags, 10 1/2 @12c. Peaches, unpeeled, 8 1/2 @11c; peeled, 14 @16c.

#### New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR WEEK ENDING APRIL 29, 1902	
698,900.—ROCK DRILL CLAMP—F. R. Brown, Unga, Alaska.	
698,814.—DOUGH MANIPULATOR—Chase & Rickey, S. F.	
698,915.—CULTIVATOR—W. C. Evans, Antioch, Cal.	
698,699.—TRACTION DEVICE—F. L. Gould, Seattle, Wash.	
698,701.—CAN CAPPER—H. L. Guenther, Chinook, Wash.	
699,108.—EXTRACTION OF PRECIOUS METALS—B. Hunt, S. F.	
698,706.—WRENCH—E. Huntley, Seattle, Wash.	
698,718.—NIPPLE CHUCK—W. G. Leas, Seattle, Wash.	
698,530.—VALVE—F. H. Mason, Spokane, Wash.	
698,847.—TAPPET—McDonald & Tregoning, Grass Valley, Cal.	
698,553.—INJECTOR—W. Plotts, Whittier, Cal.	
699,011.—MANUFACTURE OF SULPHURIC ACID—W. R. Quinn, Pinole, Cal.	
698,737.—CONCENTRATOR—M. D. Rochford, Kingman, Ariz.	
698,740.—CAR COUPLING—R. H. Rutherford, Marion, Or.	
698,742.—SASH LOCK—W. Scharnweber, Seattle, Wash.	
698,750.—LOG TURNER—J. J. Skinner, Paso Robles, Cal.	
698,556.—CULTIVATOR—J. H. Thompson, Edna, Cal.	
698,760.—WINDOW OPENER—J. M. Thorp, Alameda, Cal.	
698,764.—PRUNING SAW—Geo. R. Tyler, Pomona, Cal.	
699,053.—OIL BURNER—R. Witty, San Bernardino, Cal.	

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test of time. Its properties are peculiarly adapted to the cure of a great number of horse injuries and diseases. It is equally effective for inflammation, bruises and soreness of any kind in the human body. Ask your druggist for Kendall's Spavin Cure, or write the Dr. B. J. Kendall Co., Enosburg Falls, Vt., to-day for their book on "The Horse and His Diseases." They send it free if you mention this paper.

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24 " " " 15.00 " "	
30 " " " 17.50 " "	

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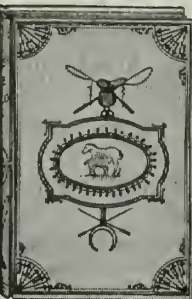


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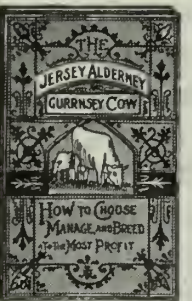
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### ENTOMOLOGICAL.

#### The Black Aphis of the Peach.

By WARREN T. CLARKE, University Entomologist in Placer County.

In the course of my investigations in the peach orchards of Placer county in the matter of the peach worm, certain facts have been noted that are of interest entomologically, and also from their economic bearing are of great importance to the growers of this region. I wish here to deal with but one of these facts, to draw attention to but one of the insects noted as showing great possibilities of future destructiveness. In very many of our peach orchards trees have been found more or less covered with a minute louse-like insect. This insect will be found on close inspection to range in color from a yellow-brown to shining black. It is found in two forms—the winged and wingless. The full grown, shining black specimens have well rounded abdomens and are very conspicuous. The winged specimens are somewhat smaller than these, with abdomens rather more pointed. This insect is the Black Peach aphis (Aphis prunicola), and the above description will serve in a general way for its identification. The insect can hardly be mistaken for any other, and the peach tree that is infested with them can be easily recognized by its appearance. The insects occur in such numbers that they literally give the tree a dark color. Undoubtedly, many of our growers have noted trees affected as described, and have also noticed that many ants seemed to be at work among the aphids or plant lice. In many instances that have been brought to my notice this work of the ants has been looked upon as a benefit, and it has been considered that the ants were destroying the aphids. This idea was a mistake, for on closer inspection it will be found that in no case does an ant destroy an aphid. The relation of the ants to these aphids is interesting from the growers' point of view because of the following facts: The aphids live not only on the leaves and twigs of the peach tree, but they are also to be found in great abundance on the roots. The individuals living above ground are voracious feeders and suck in much more of the plant's sap than is necessary for their maintenance. The surplus material taken in by them exudes through two hornlike appendages on the back of the abdomen as a sweetish fluid, known as "honey dew." The ants are very fond of this "honey dew" and eagerly lap it up. In return for the food furnished to it by the aphids, the ants carry the young aphids down to the roots and place them in positions that are protected from the inclemencies of the weather, and thus the continuance of the aphid species is insured.

We note, then, that the peach aphis is to be found in two localities upon the tree—the roots and the leaves and tender twigs. It can carry on its life functions quite easily in either situation; in other words, it is not necessary for the continuation of the species that it should be able to occupy both positions during the life of the individuals. This fact is of great economic importance, because we can easily destroy the above-ground form, but by no means yet known can the root form be destroyed without also destroying the tree.

We are, therefore, confronted with the fact that the Black Peach aphis, which in certain of the Eastern peach-growing sections ranks second in destructiveness to the "Yellows," has appeared in this region. From a rather

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by local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever. Nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

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close study of the facts in my possession, I am inclined to say that it has been present for several years. It is undoubtedly more widely spread this year than in any previous year and will surely become more widely spread and extremely destructive unless immediate steps can be taken to stamp it out. It may even be now that completely checking its work is impossible. I wish, however, to say that an effort is decidedly called for.

WHAT CAN BE DONE?—Every tree, young or old, that is found to be infested should be destroyed, root and branch, by fire. Half way methods are of no avail. Spray the infested tree with oil and set fire to it. Burn the roots. Do not plant another peach tree in the same place for at least one year. Remember that the insect is in one form winged and can spread easily from tree to tree and from orchard to orchard. Do not attempt palliative measures that will surely avail nothing. No spray can reach the root form. A vigorous campaign now means a vast saving later on.

#### Peach Moth Investigation.

Warren T. Clarke, entomologist of the University of California, who is now residing temporarily in Placer county for the purpose of a peach moth investigation, has sent the following interesting communication:

An examination of our peach orchards at this season of the year shows certain interesting and instructive facts. We find that an extremely large acreage was sprayed in an effective and thorough manner this spring, and we also find that many trees were not sprayed. This condition of affairs, while it is much to be regretted that any trees were neglected, gives us a basis of comparison, and it is in this comparison that we get at results in the peach moth fight so far obtained. By a close examination of the trees in any peach orchard that was properly sprayed with a correctly made lime, salt and sulphur wash, it will be seen that few if any of the hibernating worms escaped and the orchard will be practically free from the "bud worm." On the other hand, the unsprayed trees are found to be well infested with this "bud worm" form of the peach worm. These results, thus meagerly stated, indicate that this pest of the orchards can be largely, though not entirely, controlled by the spring treatment referred to. There still remains to us the problem of the control of the later generations. The problem is as yet unsolved, though undoubtedly the present investigation will bring about its solution. There have been enough orchards neglected, enough trees left untreated to produce moths to stock up the region again in time for the late peaches.

All the work so far done indicates that if spraying is generally made of paramount importance in the farm economy, and if spray is properly made and put on the trees at the proper time then, practical control of the peach moth may be expected. We consider the results so far obtained to be extremely gratifying.

#### The Government Gets Ladybirds from China.

The Department of Agriculture is preparing to fight the ravages of the San Jose scale throughout the country with its natural enemy, the ladybug, brought from the interior of China. Assistant Botanist Marlatt has just returned from the Orient, where he sought the original home of the dreaded scale. Far in the interior of the Flowery Kingdom, where European plants had not penetrated, he found the scales and also the ladybugs, which kept the scales in subjugation and permitted the native plants to flourish. Mr. Marlatt started home with a good supply of these ladybugs, but only sixteen survived on arrival in this country, and fourteen of these subsequently died. The two remaining, however, were nursed carefully by the Government with a view to fighting the scale in the same manner as in China. There



are now fifty of them, requiring the constant gathering of scales from the department grounds for food. While not expecting the scales to be exterminated in this country, experts are planning to attack them with the increasing breed of their natural enemies.

### The Canker Worm.

Mr. H. G. Keesling writes of ways with the canker worm for the San Jose Herald. He says: The war against the canker worm has been going on for many years and many methods of fighting are in use, some quite successful and others only partly so.

Without rehearsing the several methods most recommended I will give two only that at this time may be put in operation, and are said to be effective if applied thoroughly and persistently.

The worms are now in the trees and are eating rapidly the foliage and fruit, therefore there should be no delay.

First—The shaking method is practiced by some growers with good success. The method of procedure is to shake the trees by hand and by the use of long poles and also by throwing earth into the trees with shovels so that the worms spin down as far as possible on their webs, when the webs are cut off with the poles and the worms drop to the ground. Immediately following this operation the trunk of the tree for a space of 6 or 8 inches is smeared with a mixture of blackstrap molasses, flour and coal tar in such proportions as will insure a sticky obstacle that will not dry quickly and over which the worms cannot pass in their efforts to get back upon the tree. In two days all the worms upon the ground will be dead.

Second—Spraying with Paris green. This is commonly recommended by the horticultural commissions as a practical way and the proportion of green to water is put at one pound of green to 200 gallons of water.

By practical tests this has been found to be too weak a solution and some growers use it in varying amounts up to four pounds to 200 gallons. We are advised that two to two and one-half pounds to 200 gallons is quite effective and does not burn the foliage if properly applied.

The proper way to proceed is to first mix the green with a small quantity of water so that all the particles are thoroughly mixed and wet. Then put it into the barrel to which the pump is attached and add slacked lime, about five pounds to 200 gallons. While spraying, the mixture in the barrel should be constantly stirred and this is the secret of doing good work without injury to the trees.

Paris green is very heavy and precipitates very quickly and any inattention on the part of the man who does the stirring may allow the green to settle until it is too strong near the bottom of the barrel and when sprayed upon the trees the tender leaves are burned.

Spraying should begin as soon as possible after the worms are hatched out.

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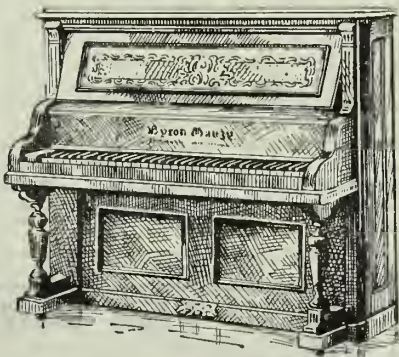


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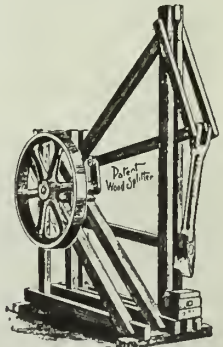
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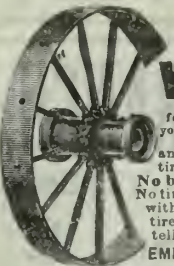




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## THE IRRIGATOR.

Irrigation and Live Stock Interests.

By GEORGE H. MAXWELL at the Annual Convention of the National Live Stock Association at Chicago.

I wish to say a few words upon a point which I think is one of the most important propositions to be considered by the members of this association from the West, and that is the relation of water for irrigation to live stock production.

It is not acreage which measures your profits, but the number of fat cattle or sheep you turn off in the course of a year; and this annual product is not in proportion to the number of acres you range over, but in proportion to the amount of stock food you turn into cattle or sheep.

It is commonly said that it takes twenty or thirty acres of average dry range to carry a steer for a year, and there are places in the arid West where one steer would do well to live a year on 100 acres. One acre of irrigated alfalfa will carry one steer for a year.

**WHAT IRRIGATED ALFALFA WILL DO.**—In an address before the Trans-Mississippi Commercial Congress at Cripple Creek, Colo., last July, I. D. O'Donnell, one of the best known stock men of Billings, Mont., gave the following figures:

"One acre irrigated alfalfa will produce 10,000 pounds; one acre in enclosed pasture will produce 500 pounds; one acre range will average a production of 250 pounds; again, one acre of irrigated alfalfa will feed one steer 400 days; one acre of enclosed pasture will feed one steer 20 days; one acre of average range will feed one steer 10 days. Putting it in the form of sheep it will show that 160 acres irrigated alfalfa will run 1600 sheep one year; 160 acres of enclosed pasture will run 80 sheep one year; 160 acres of range will run 40 sheep one year."

**IRRIGATED OR DRY RANGE.**—Apply these figures to the problem of stock growing in the arid region. Taking the proportions given above in round

numbers, 160 acres of irrigated alfalfa will carry 146 steers for a year and it would require something over eight sections—5120 acres—of dry range to carry the same number of cattle. Putting it briefly, one acre of irrigated alfalfa is worth as much as thirty-two acres of average dry range; 640 acres in alfalfa would beat 20,000 acres of dry range; 20,000,000 acres of irrigated alfalfa would carry more stock than the whole 620,000,000 acres of government land in the West, and there is water enough runs to waste at the junction of the Platte and the Missouri to irrigate 20,000,000 acres of land. That will give you some idea of what water storage by the National Government means to the live stock industry. Let us turn, however, from the consideration of the subject in its largest aspects to a view of it in its smallest aspects.

**WHAT PUMPS CAN DO.**—A windmill which will irrigate one acre of land in alfalfa will add the equivalent of thirty-two acres of range to the farm or ranch. An engine and pump that will irrigate ten acres of alfalfa will add half a section to the farm—that is, it will increase its productiveness just as much as would the acquisition of the additional land. A pumping plant large enough to irrigate twenty acres will add the equivalent of a whole section of range. Any irrigation system which will irrigate a whole quarter section of alfalfa is as good as the permanent acquisition of eight sections of range.

Those figures are worth studying. They show that a great many of our live stock men are worrying about more range and scheming and planning to get more land, when they would find it easier and more profitable to irrigate some of the land which they already have and get better returns from it. There is a great deal of land that will grow alfalfa without surface irrigation. It is sub-irrigated from some source. I understand that the fine ranch of Mr. Watson, near Kearney, Neb., produces alfalfa without surface irrigation, but the roots must go down to water.

**USE ALL SOURCES OF WATER.**—Another thing that many stock men might do to get water for irrigation is to dam the draws and coulees and make ponds and reservoirs that will hold back the water until needed. Look your ranches over for such places, and stop the water from running to waste. Turn it into alfalfa and then into fat stock. Every drop of water that you let run to waste on your ranches is just like letting so much money run to waste.

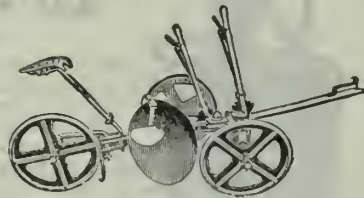
I want to impress on your minds that the National Irrigation Association, which I represent, is not alone seeking to bring about the construction of large government irrigation works. Our aim is to awaken a greater interest in irrigation from all sources of water supply; and by every means of making the water available, whether it be an artesian well, a windmill, a pump, an engine, a pond made by damming a draw, a ditch or canal, large or small, or a great government reservoir or

main line canal, which makes the water available, the ultimate purpose is the same—to make land fertile and make some producer more prosperous and add to our national wealth.

Our association is endeavoring to inculcate into the minds of the people of the West that water is the source of their prosperity, and we urge the utilization of every possible method of increasing and utilizing the water resources of the West in order that more money may be put first into the pockets of the Western people, and through them into the pockets of the people of the whole country.

Another thing you should bear in mind is that as time goes by, where water is running in canals, it will gradually soak the adjacent country up with water, like a great sponge, and you will raise the water table so that you will not need so much surface irrigation in many places. The return seepage will re-enforce the flow of the streams, and you will have springs coming out where there were none before, and the arid condition of the country will be entirely changed.

**MELONS THIS MONTH.**—Indio Correspondence Fruit World: Cantaloupes are doing finely in the Coachella valley, and some of the earliest plantings now have melons on as big as hen eggs. The season will be two weeks earlier than last year. If nothing unfavorable intervenes, the first shipments will go forward about May 23. The valley is several hundred feet below sea level, and its climate makes a natural hothouse. Nutmeg cantaloupes in May will be an eye-opener for the Eastern trade.



The new Benicia-Hancock disc plow put out during the past season proved to be an unqualified success. In view of past failures on the part of Eastern manufacturers, the Benicia Agricultural Works may feel proud of their product. More were sold than anticipated, for the public had begun to think that the disc did not make a good plow. It is safe to assert that no disc plow can be a success unless made under the Hancock patents, which have just been sustained in an injunction suit brought against an imitator. Baker & Hamilton have established agencies over the greater part of several States. Write them at San Francisco, Cal., for particulars.

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## Apricot Kernels in France.

Mr. A. W. Tourgee, American Consul at Bordeaux, writes to the State Department that several inquiries have been received at his consulate from American dealers who wished to find a market for apricot kernels. He replies: The meat of apricot pits is largely used here, as elsewhere, as a substitute for almonds, being cheaper and slightly more acid. Confectioners use it in powdered form, which is quite indistinguishable from almond powder. Chemists employ it both in powder and extracts. Bakers make "almond paste" of the powdered pits. It is also used in the manipulation of certain wines.

The consumption of apricot pits in all these forms in this district must of necessity be very large, and it is not strange that American dealers should look to a region noted for the production of all the articles in the preparation of which these are used. Unfortunately for the hope of finding a market here, the domestic supply is very great and the neighboring countries—Spain, Italy, Algeria, and, in short, almost the whole Mediterranean littoral—are the home of the apricot, and, since attention has been lately more strongly drawn to the various uses to which the pit is adapted, afford a constantly increasing supply.

At present, this supply seems to be sufficient for home consumption and also for a considerable export trade, including, among other countries, some shipments to the United States.

**HONEY OUTLOOK.**—G. F. Havens, a prominent bee man of Trabuco, near Santa Ana, says the bees do not exhibit their usual activity for this period of the year. This is owing to the recent cool weather. Mr. Havens does not expect an extraordinarily large output. This is due, he says, to the light rains.

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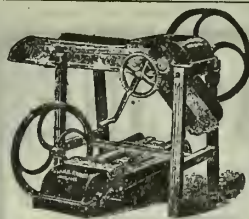
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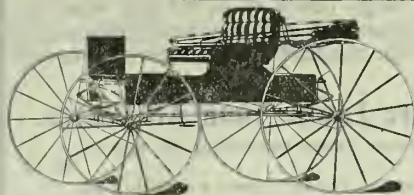
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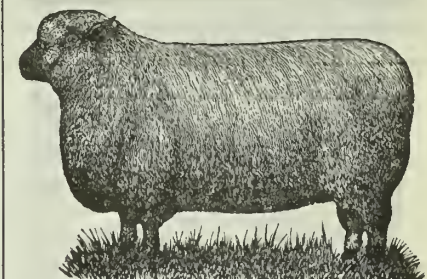
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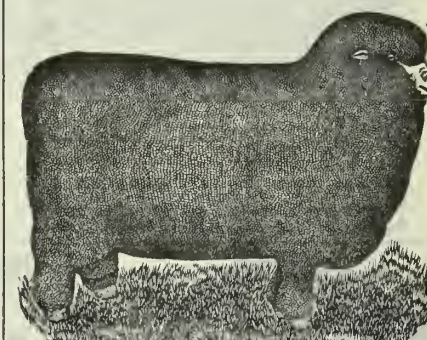


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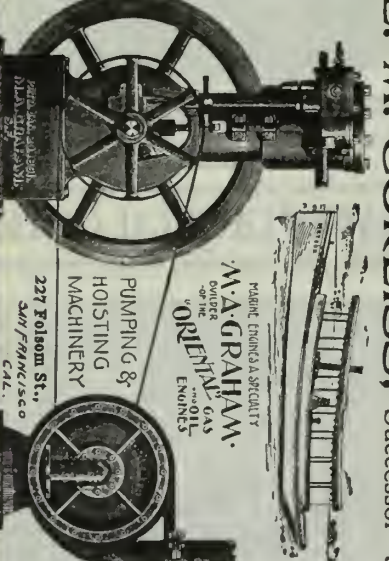
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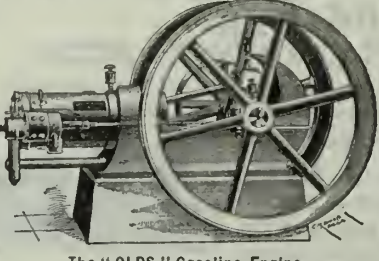
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# THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 21.

SAN FRANCISCO, SATURDAY, MAY 24, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

## Star Gazing at the South.

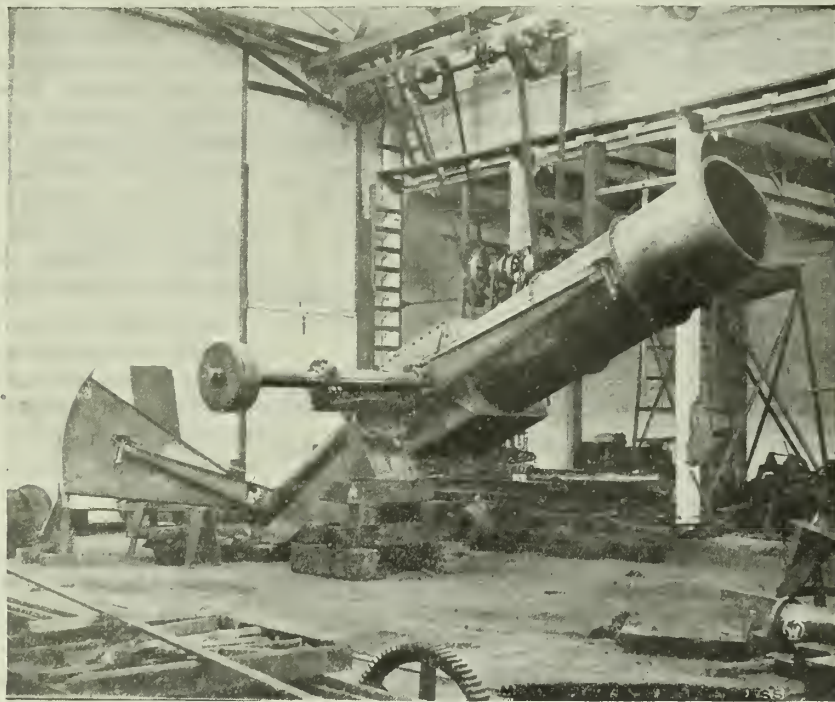
California has perhaps a greater percentage of clear sky for star gazing than any other State, and yet California astronomers are not content with the California aspect of the heavenly bodies. They wish to see the other side of them apparently, and so there is to be a California observatory away along toward the South pole in Chile. How this comes to be desirable is explained in this way:

It is one of the fundamental laws of the universe that every celestial object is in motion. One star is moving in this direction, another in that, and so on indefinitely, some with a velocity almost zero, others with velocities as great as 60 miles a second away from the solar system. If a star is moving at right angles to the line of sight, its motion can, in the course of a few years, be detected by the usual telescopic methods; but the component of motion toward or from the solar system must be measured by means of the spectroscope.

The velocity of the stars are measured at the Lick Observatory, not from a great interest in the motion of each star, but that the results may be combined for many years, and therefrom the motion of our own solar system through space may be determined. For this purpose it is desirable that observations be secured of as many stars as possible, and that they may be observed over the entire sky. From the Lick Observatory one can observe stars situated between the North pole and a circle 30° south of the equator; but the stars from 30° south on to the South pole cannot be observed from there. It is therefore needful that a powerful telescope be located in the southern hemisphere, in order to extend the work to the South pole.

When the liberal ex-Californian, Mr. D. O. Mills, heard of this need of our astronomers, he gave a sum of money to construct the telescope-spectroscope, a dome to cover them, to defray the expense of installing the observatory in the southern hemisphere and to pay the salaries of the astronomers engaged in the work. And now comes a very interesting fact, which is that California mechanics can build telescopes for California astronomers to use. The picture on this page shows this new telescope which is to go to Chile, under construction in the San Francisco shops of Harron, Rickard & McCone. The optical parts are made in the East.

The illustration shows the telescope so far as completed. Considerable



A California Telescope to be Installed in Chile.

work is still manifestly necessary, and after completion it will be erected, tested and finally sent to its destination in the vicinity of Santiago, Chile.

## Sacramento Valley Homes.

Our illustration shows a group of the commodious and comfortable homes which are now being multiplied in the fruit districts of the Sacramento valley.

They show how the development of the State is advanced by the colony method and how colonies are built up by local effort at the East. For instance, all these residences were built by Chicago people, and they are all situated in the prosperous colony of Fair Oaks, situated on the high bluffs of the American river, about 15 miles from Sacramento. A branch of the Southern Pacific connects it with the capital, of which it is virtually a suburb. The broad, rolling lands, with their beautiful, thrifty orchards of orange, lemon, pomelo, olive and deciduous fruit trees, were originally covered by a magnificent growth of white and live oaks, attesting the great strength and fertility of the soil. An ample water supply for irrigation and household purposes is brought down from the upper portion of the American river and piped to all the individual ranches. Every one of these ranches, be it even so small as ten or five acres, affords a beautiful building spot, from which may be seen the snow-crowned Sierras at the east.

The illustrations above show to some extent what has been done there within a short space of time. The two residences pictured at the bottom are those of Mr. George Straith and Mr. Andrew T. Hodge, both of which crown the high bluff above the river. The upper ones are the residences of Mr. C. H. Vehmeyer and of Mrs. Buffum. Besides these more conspicuous and elegant residences, there are numerous modest, but very attractive, cottages dotting the broad expanse of the colony and a handsome business block and hall in the center of the oak-embowered village.



Some Homes in the Fair Oaks Colony, Sacramento Valley.



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E. J. WICKSON. Horticultural Editor

San Francisco, May 24, 1902.

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## The Week.

The world is celebrating the independence of Cuba in very serious meteorological fashion. The terrific volcanic eruptions in the Lesser Antilles are grand phenomena but appalling in their destruction of life and property. Snow storms along the northern border States; heavy rain storms and tornadoes in the great central country are the portion in the general disturbance allotted to those parts of the United States, while California receives her tempered share in rather cool spring weather and winds which do some harm to fruits and fruit trees. Details of this are given in the regular report of the Weather Bureau upon the next page. Since that was prepared additional tidings of reduction of crop have been received. Growers should remember these things when talk of immense fruit crops is indulged in.

Cereals have done better since the low tide mentioned in our last issue. There was, in fact, quite a reaction at the close of last week, and though all the advance was not retained prices generally are better than a week ago. Four cargoes of wheat have gone abroad and 12,000 barrels of flour have started for South America. One cargo of wheat has set out for South Africa at a charter rate of 26s 9d. There is much food going from the coast to South Africa this year. A chartered vessel called here on her way to take oats and flour from Vancouver to South Africa. Ships to take wheat from this port to Europe are arriving under charters at 27@28s. Bran and other mill offal are unchanged, but milled barley and corn are higher. White beans are more steadily held and Limas are held higher; supplies of all kinds, except white and pink, are small. Choice wheat hay is higher; other kinds are unchanged. Beef and mutton are steady at last week's figures. Large veal is easier and small is bringing full figures. Hogs are more plentiful, but unchanged, except possibly a shade in favor of packers. Butter prices are well sustained, while cheese is slow and easy here, though high at the East. Eggs are quiet and steady. Poultry is slightly improved in feeling and sales are more frequent at outside figures. Old potatoes are low and slow, while new are more abundant and easier. Old onions are about out and new reds are abundant and cheap. There was an excess of field peas, but they are steadier now. Other details are given in our Market Review. New fruits, including strawberries, are increasing in volume and declining. Oranges are in smaller supply, but the demand is also slack

except for choice. Lemons are no better and limes are cheap as ever. Stocks of dried fruits are small and the market strong in tone and promising for the new crop. Wool is quiet, but healthy, and apparently waiting for better labor conditions at the East. The product is very confidently held here.

The news from Washington is that Prof. Elwood Mead, the irrigation expert of the Agricultural Department, writes to Senator Perkins that the alkali investigation asked for by the people of Fresno and vicinity is to be commenced at once, without calling on the people there for assistance, which they offered. The increased appropriation made by the Senate and agreed upon in conference, amounting to \$65,000, will allow the work to be taken up. Prof. Mead adds that the Department is arranging to prosecute studies in pumping, asked for by the farmers of San Jose and vicinity. This will give two field parties in northern California, in addition to the resident assistant in southern California. This is a good illustration of the advantage of asking Congress for what you want, and asking hard. It is clearer than ever that we can hardly have too much true light on these irrigation problems. We shall be dependent upon them to an extent little dreamed of a few years ago.

The directors of the Cured Fruit Association are about to announce a way by which a member can withdraw from the association and be entirely relieved from any obligation to it, legal or moral, and at the same time preserve his interest in the assets of the combine. How this can be done will probably be made known by the end of this week. It is believed that this will be an escape from difficulties, put the combine on a practical working basis and make it a success. We hope it will.

The likelihood of scant labor supply for the fruit harvest continues a subject of much concern among growers. It is an encouraging fact, however, that town people having vacations available are counting upon working in the orchards in greater numbers than ever before, and this may help out. There ought to be a co-operative effort among crop growers to look into the supply and handle it to the best advantage. We are interested in reading that the rice growers of Texas and Louisiana, through their organization, have opened communication with the implement dealers of Kansas and Oklahoma, with a view of co-operating in securing hands, first for the care of the wheat harvest in the North and then the rice harvest of the South.

W. A. Henry, Dean of the College of Agriculture, and Director of the Agricultural Experiment Station, University of Wisconsin, will deliver a course of lectures at the State University, Berkeley, beginning July 14th, and continuing three weeks. The subject treated will be "Animal Nutrition and Rational Feeding of Live Stock." Professor Henry has been connected for nearly twenty-two years with the University of Wisconsin. The college under his charge has since that time grown from nothing to one of the important departments of the University. During the present year the total attendance of bona fide agricultural students at the University of Wisconsin numbers 446. So great has been the pressure for instruction in agriculture at the University that the State of Wisconsin has inaugurated county agricultural schools. It is expected that these will do the lower grade work, leaving to the University proper that which can best be done by such an institution. The University of Wisconsin is now constructing a central Agricultural College building to cost \$150,000.

Professor Henry is the author of "Feeds and Feeding: A Handbook for the Student and Stockman." This volume, as the many whom we have supplied with it know, comprises nearly 700 pages. Its popularity is shown by the fact that although issued late in 1893, four editions in all, comprising 13,000 copies, have been printed to date. "Feeds and Feeding" is used as a text-book in nearly every agricultural college in the United States. Professor Henry's instruction in animal nutrition and stock feeding at the University will be of such character that it will be helpful to teachers of rural schools, to practical stockmen as well as to special students of the deeper problems in agriculture. The work should be especially useful to practical dairymen and stockmen generally.

## QUERIES AND REPLIES.

### Ginseng in California.

TO THE EDITOR:—I am looking into the advisability of establishing a ginseng plantation in this State and would like to know whether it can be grown successfully in California and where. I have a plantation in Missouri and for ten years it has done well, but I wish to move to this State for my health. I do not see why the plant should not do well in this State if the right place can be found. Our experience in Missouri is that it does well on good rich sandy loam 12 to 14 inches deep and good subsoil—not gumbo hardpan, nor does it want loose sandy soil either, nor must there be too large a proportion of sand in the soil.—NEW COMER, Placer county.

What you say about ginseng growing is very interesting. We are not aware that any one is growing the plant in this State, although probably during the recent excitement on the subject it may have been introduced. We have hitherto concluded that a plant native to Eastern woods and accustomed to moist summer, and partial shade perhaps, would not succeed in the dry heat and strong sunshine of the California summer. We have argued that if the plant succeeded at all in California it would be likely to do so in the moister valleys near the coast in the northwest portions of the State: perhaps not directly on the coast, but in protected valleys still open to the influences of the moist ocean atmosphere. This position is largely theoretical, for enough experiments have probably not been made to determine the matter exactly. So far as the soil requirements of the plant go you would have no difficulty in finding in the part of the State indicated, clay loams, carrying a good amount of organic matter which seem to be exactly what you describe as the needs of the plant. We should like very much to know what you decide and also what you ascertain about the trials already made in this State.

### Leaf Aphis and Cottony Cushion Scale.

TO THE EDITOR:—I send three samples of pests, one from an orange tree and the others from currant bushes. The pests on the orange branch do not appear on any other kind of a tree, while the little bugs on the currant leaves appear on the peach, plum and trees of similar nature. Our whole neighborhood is alive with them. My object in addressing you is to ascertain the names of the pests and a cure for them.—READER, Sacramento county.

The insects on the currant are plant lice or aphides. The proper treatment for them is spraying with the kerosene emulsion, no matter on what plant you find them. There are different species on the different plants, but they all are to be treated in the same way. Fortunately many of the specimens you send are parasitized, being a prey of still smaller insects which have entered their bodies and caused them to swell and take on a light-brown form. Those which have been invaded by these enemies are in this way deterred from doing you further injury. The insect on the orange is the cottony cushion scale, and the remedy for it is to secure from Mr. Alexander Craw, Entomologist of the State Board of Horticulture, Clay street dock, San Francisco, a colony of the Australian ladybugs, which will quickly clean your trees of this pest. Introduction of this ladybug is one of the greatest achievements of economic entomology and you should secure some of them as soon as possible for the protection of your trees.

### A Group of Troubles.

TO THE EDITOR:—I enclose under separate cover three samples for identification and remedy. The first is nectarine leaves. The orchard is affected in spots. I also notice the same on Orange cling peaches. The second is rosebuds. The bugs eat them entirely away. They are also attacking the vineyards and in some cases eat all the foliage. The third is a chrysanthemum and its enemies.—READER, Fresno county.

Your nectarine is attacked by "curl leaf," which affects both nectarines and peaches, and is produced by the growth of a fungus in the tissues of the leaf. It is most successfully treated by winter spraying, before the blossoms open, with the Bordeaux mixture. The insect which you find eating rosebuds and the leaves of grape vines is the hoplia, which is now quite abundant in the San Joaquin valley. As we recently remarked in answer to another correspondent, it is not a new insect, but has been reported yearly for a long time. Fortunately, it only remains for a while and then disappears. The larva of grub, of which this is a perfect form, feeds upon the roots of plants. The best way to destroy the beetles is to



spray the foliage with Paris green, one pound to 200 gallons of water. Of course, this is hardly safe for rose bushes which are to be freely handled and which one does not like to cover with a virulent poison. On such plants hand picking is probably the most practicable method.

The chrysanthemum leaves which you send are affected with aphides, or plant lice, but these plant lice are being eaten by the ladybugs which you also send. All the reddish and yellowish ladybugs, with or without the black spots, are beneficial, because they destroy insects which are injuring the plants. There is another insect shaped something like a ladybug, but of green color, with black spots, which is not a beneficial insect, but is itself very active in destroying plants and fruits. If the ladybugs which you send are not plentiful enough to keep the lice in check spray your chrysanthemum with the kerosene emulsion.

#### Barren Prune Trees.

TO THE EDITOR:—I have a 45-acre prune orchard which was planted in 1893 and 1894, and gave me a good crop for the last two years, except about three or four acres, which have never borne a good crop yet. Now, this year the whole orchard is heavily loaded with the exception of the three or four acres, which are the largest and finest trees in my orchard. Last year I had the whole orchard pruned again, but still very little fruit on those large trees. I intend to have them severely pruned next fall, as I believe they grow wood only, as smaller trees amongst them are well loaded. The prune crop around here is spotted. Some orchards have a large crop; others only one-fourth or one-half crop. Peaches and apricots are a full crop. Please say what you would do with those trees. You would oblige me very much.—JOSEPH BOEDFELD, Colusa.

Unless you have fruit enough to be sure that all the trees are of the same variety, we should think, first, that you planted a mixed lot and a part of them are shy bearers—like the Robe de Sargent or the Silver prune, for instance. Whether this is true or not the barren trees should not be pruned heavily next fall or winter. Such pruning is the best way in the world to force out a large wood growth. We should either cut them back pretty well in August or we would allow them to go unpruned next winter. If the trees are situated so that neglect of them would not hurt bearing trees we would let them get pretty dry this summer by giving them scant cultivation. The trees are either a shy bearing kind or they have had too much winter pruning and too good a time in summer.

#### More About Sulphuring.

TO THE EDITOR:—I note your answers about sulphuring for mildew in a recent issue. I wish to ask further: Does moisture injure the sulphur? How can it be told whether the sulphur is affected or not? Does the quantity affect the thoroughness of the work, and how much should be used per vine? Is the microscope a guide as to the fineness of sulphur? Would sulphur be effective against aphids?—READER, Los Angeles county.

Moisture does not injure the sulphur. The efficacy of the sulphur is seen in checking the spread of the mildew. Quantity is desirable, within limits of economy, of course, because the more sulphur the freer the distribution of vapor. The amount to be used per vine is so variable that no estimate could be given. In sulphuring when the growth is starting, of course very little is required; in later sulphuring so as to powder well the foliage of a large spreading vine more is obviously required. The microscope is a guide as to fineness of the particles, and you can learn to use it by comparison of different samples. Sulphur is probably effective to a certain extent against aphids, but a kerosene emulsion spray is vastly superior.

#### Bordeaux Mixture.

TO THE EDITOR:—Will you kindly give me the formula for the Bordeaux mixture which you speak of so often, or tell me where to obtain it?—READER, San Luis Obispo.

We have given the recipe repeatedly, but as it is a time of year when it is most in request, we give it once more. Will not all readers now kindly paste it in their hats, so that we can feel free to mention it whenever occasion requires without wondering whether the reference is understood. The following formula for Bordeaux mixture is safe for summer use: Lime, 4 pounds; bluestone (sulphate of copper) 4 pounds; water, 40 gallons. Use part of the water to slake the lime and dissolve the bluestone, which

should be done in separate vessels. The bluestone must not be dissolved in a metal vessel. If put into a bag and suspended near the surface of the water it will dissolve more readily, or hot water may be used in making the solution. Both the slaked lime and the dissolved bluestone should be allowed to get cool. Pour the whitewash very slowly through a wire screen into the copper solution. Stir the mixture thoroughly and add enough water to make forty gallons in all. In the preparation of the Bordeaux mixture it is necessary that the ingredients should be mixed in a wooden vessel. If an iron vat is used the copper will go to the iron and the effect of the spray is largely neutralized. Apply the remedy cold and as soon after it is prepared as possible. It should be freshly made each day.

#### Leaf Spot of Strawberry.

TO THE EDITOR:—What is the matter with the enclosed strawberry leaves? On plants thus affected the berries dry up when half grown and the plants die at the roots. What is the remedy?—C. H., Bakersfield.

The leaves are affected by the rather common fungus known as "leaf spot." The remedy for this is spraying with Bordeaux mixture. Its application now will not, of course, cure the leaves, but it will save the newer leaves and thus save the plant. We doubt, however, if the leaf spot is to be charged with what you say about the death of the roots. It is too early in the season for that and the leaves retain too much vigor. You should examine the roots for grub; split open the root crown and see if there are not borers present. Many plants are lost in this way.

#### Wood Ashes Not a Cure for Pear Blight.

TO THE EDITOR:—We have been using wood ashes as a preventive of pear blight. We dig around the roots, put in ashes and cover with dirt. We find a worm working in the roots and the ashes kill it.—PEAR GROWER, Lemoore.

It is not likely that the application of wood ashes would have any effect on the pear blight, because the pear blight is known to be caused by bacteria which circulate in the sap and enter the tree, not from the ground, but from the tips of the new growth. Ashes are very good for woolly aphids and they will kill any kind of worm that may be working near enough to the ashes to be killed by the alkali which will be leached out from them, but as none of these things cause the pear blight the destruction of them would only be indirectly beneficial to the tree.

#### Unhealthy Growth of Peaches.

TO THE EDITOR:—Can you tell me what is the matter with my Muir and Crawford peaches, samples of foliage of which I enclose? They are yellowish in color and foliage is scanty. What can be done to help them? They have had one irrigation this season and cannot be suffering for water. The fruit is not dropping.—A. T. WHITE, Fresno county.

The leaves sent do not show disease, but they are undersized and yellowing. There is something the matter with the growth of the trees. We have seen recently in many places that fruit trees were not leafing out as they should, and the best guess we can make at the reason is that the prevailing low temperature this spring is concerned in it. Atmospheric conditions do not seem to favor free and full leafage. Our impression is that better growing weather will help out the trees, though it is not as a rule promising for them to start in as they are doing this year in many places.

#### Soft Orange Scale.

TO THE EDITOR:—I send you in separate package some orange tree twigs taken from nursery stock. What is the scale found on them? Is it very destructive to trees? What is the remedy?—A SUBSCRIBER, Butte county.

It is the "soft orange scale" (*Lecanium hesperidum*). It is, perhaps, the least harmful of all the scales, because it seldom reaches high prevalence and it is most easily killed. Spraying with kerosene emulsion or whale oil soap—one-quarter pound to the gallon of water—will clean it out.

#### Blackberry Rust.

TO THE EDITOR:—I send two leaves of blackberries which are covered with a yellow rust. Please let me know through your paper what can be done for it.—READER, Atwater.

It is a parasitic disease of the blackberry commonly known as blackberry rust. It also affects some roses. The orange-yellow powder which occurs so profusely on the under sides of the leaves consists of

the spores which carried by the wind or otherwise establish the disease anew wherever they reach the leaf of a plant they like. The remedy is spraying with the Bordeaux mixture. This will not help leaves so far gone as those you send, but it will kill all the spores it reaches and thus protect the newer foliage.

#### Orange Leaf Aphis.

TO THE EDITOR:—I enclose a leaf of an orange tree infested with an insect which appears to be a species of black ant when grown. Will you tell what they are and how to get rid of them?—L. G. MANOR, Colusa county.

It is a leaf louse or aphid. It never gets to be an ant, though ants are generally found with them. They are seeking the honey dew which the aphid exudes. Spray with kerosene emulsion or whale oil soap—one-quarter of a pound to the gallon of water. If you have only a few small trees and water under pressure, spray them with a good force and you will knock them endways off the tree, and you will not care if they never come back.

## WEATHER AND CROPS.

### Report of the U. S. Weather Service for Week Ending May 19, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

#### SACRAMENTO VALLEY.

Rain at the beginning of the week was beneficial to crops generally, but damaged hay and ripe cherries. The high winds at close of the week have doubtless caused considerable damage to fruit, especially cherries, apricots and almonds. A report from Wheatland states that wheat heads appear very short, and the yield may not exceed that of last year. Other sections report that grain prospects were never better, and heavy crops are expected. Hay harvest is progressing with good results. Hops are in excellent condition. Deciduous fruits, where not damaged by the recent rain and high winds, are doing well and good crops are probable; apricots are ripening rapidly. Cherries and strawberries are abundant and of excellent quality.

#### COAST AND BAY SECTIONS.

The rain on Tuesday and Wednesday in the central and northern districts was generally beneficial, though it caused some damage to ripening fruit and cut hay. High winds at the close of the week have probably been injurious to fruit and grain, but no estimates of the loss have been received. The weather in other respects has been generally favorable for growing crops, which are advancing satisfactorily. There will be good crops of grain except in some of the southern counties. Hay continues; the hay is reported of superior quality, but the yield light in the southern districts. Deciduous fruits, except prunes, are in excellent condition. The strawberry crop in Sonoma county was badly damaged by recent rains. Vineyards are doing well.

#### SAN JOAQUIN VALLEY.

High winds at the close of the week caused considerable damage to fruit, especially ripening cherries, and probably injured grain to some extent. The rain on Tuesday extended through the valley and was very beneficial; cut hay was not seriously damaged, but there will be some loss. In the southern counties some grain is being cut for hay and the wheat crop will be very light, but in the central and northern districts prospects continue good for abundant crops of wheat and barley. Early wheat is turning and barley is nearly ripe; harvest will commence soon in Madera county. The first crop of alfalfa is reported the heaviest ever known. Pasture is plentiful. Deciduous fruits are in excellent condition, with the exception of pears in Tulare county, and good crops are expected. Vineyards are thrifty.

#### SOUTHERN CALIFORNIA.

The showers Tuesday night and Wednesday were too light to benefit crops, which are now needing rain badly. Late sown grain is reported in bad condition, and the early sown is being cut for hay. The high winds at the close of the week have probably still further damaged the grain crops and deciduous fruits. Hay is progressing. Vegetables and other irrigated crops are doing well.

#### Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, May 21, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the Week.	Minimum Temperature for the Week.
Eureka.....	.18	50.48	46.99	41.57	60	44
Red Bluff.....	.00	31.59	24.51	34.00	78	46
Sacramento.....	.00	17.81	19.77	23.05	74	44
San Francisco.....	.02	18.79	20.97	24.58	82	48
Fresno.....	.00	6.85	11.09	12.88	78	48
Independence.....	.00	4.30	5.91	5.48	78	34
San Luis Obispo.....	.00	21.95	31.08	17.20	72	36
Los Angeles.....	.1	10.57	15.59	17.32	74	46
San Diego.....	.01	6.16	11.29	7.55	64	50
Yuma.....	.00	.68	3.60	2.88	88	50



## HORTICULTURE.

### Hillside Horticulture.

TO THE EDITOR:—The following notes from a "Sidehill" may be useful to "G. A." of Marin county, and others who are new to the mountains and mountain methods:

**TOOLS.**—The best tools for sidehill orchard cultivation are a good revolving plow, a reversible disc harrow with extension head, an iron lever harrow and a clod smasher. Of revolving plows, the Knapp of Halfmoon Bay has been the best for thirty years. The No. 2 is the two-horse plow and needs a wheel, and an extra point to be kept sharp and always ready to replace the dull one. The whole plow should go to the blacksmith occasionally so that he can keep the point true, or else the plow will cut more going one way than the other.

When the field runs over the top of a hill or clear around it a level land plow can be used to advantage, plowing round and round the piece; but no plow turns the land over and the sod under when it has to lift the dirt directly uphill, and when this is the case the revolving plow is the only one fit to use. It can always be worked on the level, and if the tree rows run diagonally to the level furrow, as they should, and a light mattock is carried on the plow, each tree can be dug around as it is reached, thus leaving no ridges, but a smooth surface and a finished job.

**ORCHARD PRACTICE.**—The orchard on the coast, where the rainfall is heavy, should not be plowed till February or March, thus escaping washing from the heavy winter storms. There is then a heavy crop of green stuff to turn under to assist fertility and feed the growing crop. In one to four weeks after plowing, preferably after a rain, but always before the weeds get a start, the disc should be put on. The extension is used under old and overhanging trees, but where the trees are vase-shaped, stocky and properly pruned, it is not needed. It should be adjusted to an in-throw for the sidehill; then, by lopping half each time, the center ridge is cut out and a cross-harrowing with the common harrow levels the surface. The ten-disc or heavy two-horse harrow cuts about five feet and will worry a span of 1400-pound horses on level ground before the day is through. Three horses make a bad orchard team, and four active 1100-pound horses will take this harrow up a hill of 30% grade in good shape, and is the best outfit where twenty acres or more are handled.

The disc is the only cultivator that does not pull downhill. It will stay just where it is put, and a good driver with a good team in a properly pruned orchard will leave but a few inches of unworked ground along the tree row.

The next cultivation will be in a transverse direction, and if a third is necessary, still another direction is taken, thus reducing the hand work to a minimum.

Towards the end of spring, when cultivation is about over, a hoeing around each tree will be necessary. The best tool for this is a blacksmith-made, all-steel mattock of  $\frac{3}{8}$ -inch steel, 3 inches in width and attached to a common handle by a little clevis running through the wood about 3 inches from the steel and bolted to it. A two-pronged fork on the other end makes one of the best of sidehill spud diggers. This tool, highly tempered and sharp, will cut all suckers neatly and prove a favorite in orchard, vineyard, or potato patch.

After discing, the iron, sharp-toothed harrow is driven crossways, with a couple of old socks tied around the ends so as not to bruise the bark.

If the land turns up dry and lumpy the clod smasher is used. It is made of 4-inch plank, with harrow teeth driven clear through, thus leaving one side a short-toothed harrow and the other a smoother. Standing on this the driver shifts his weight to suit the slope of ground.

**THE VINEYARD.**—For vineyard use a one-horse Knapp plow is best, always turning the ground down hill. A small harrow with handles follows. The strip of sod along the row of trellised vines, or the small square at each vine in a cross-plowed vineyard, is hoed by hand. An iron-framed, walking cultivator with five to seven teeth and one horse or two finishes the work. The kind with reversible convex teeth about 3 inches in width costs \$5.50 to \$7.50, and is the best.

Vines require more hand labor in cultivation than trees, and more work in pruning—\$4 an acre is about the price paid in thrifty vineyards in the coast counties for cultivation and about the same for pruning. Suckering, sulphuring and slashing off the rank young growth are extra.

**PECULIARITIES OF SLOPES.**—Other things being equal, the south sidehill ripens a crop first; next, the west sidehill; the east slope comes third, and the northern exposure latest. Fungoid disorders, such as scab on the apple and pear and curl leaf on the peach, are worse on the north slope or one exposed to cold northerners; least on the south and sunny exposure, and bad on the east and west sides. This is much modified by the protection, or lack of it, from cold northerners. Frosty and sultry weather alternating during the blossom period favors the growth of

fungoid spores. The south slope may, however, be least desirable for orchard planting on account of the rock strata causing much water seepage and poor surface drainage. The east and west slopes are usually better soil, better drained and the best for fruit in the coast section.

**DISTANCES.**—Crops grow well between trees up to the time of fruit production. After the tree begins bearing well the crops should cease, as the trees need the whole soil for sustenance and fruit production. Trees are commonly planted too close; 30 feet is little enough for apples, apricots, cherries and Winter Nelis pears. Peaches, prunes and Bartlett's may be 25 feet; walnuts should be 40 feet; lemons can be 20 feet, and Japanese persimmons the same. Trees should be as far apart on the sidehill as on the level, and the measurements in setting should all be on the level.

**VALLEY OR MOUNTAIN.**—Many people object to the hills for farming, but they are usually those whose lives have been spent on the level. There is an occasional move from the valley into the mountains, but the mountaineer is never afterwards satisfied to dwell in the valley. The extra work in handling land and crops is lessened with the use of active horses and proper tools. The man who walks is better able to than his valley brother who "rides a gang." He never misses a meal and his doctor fees are small, for it's only the arrival of the new baby in the family or the occasional accident that makes a fee at all; and then the compensatory blessings of air and sun and water and soil such as his valley neighbor knows not of! The better drainage, the wood, the grass, and all the time and from every hill the view always beautiful, never wearing, restful to the "man with the hoe" and shifting ever as he turns.

Then cry who will for a valley home  
Where the brook runs murmuring by;  
I'll build my cot on the mountain dome  
Where it leads to the bright blue sky.

I have tried to hold this article in, but there's so much to be said on the subject that's pertinent to the tenderfoot that it would lengthen out in spite of me. I waited a couple of weeks for some one to answer "G. A.," and when I got started I couldn't in justice quit sooner.

HUMPHREY PILKINGTON.

Santa Cruz.

[We are sorry you stopped so soon. The discussion is very fresh and interesting. Give us another chapter; and while you are preparing that, what have other hillside readers to say?—Ed.]

## THE APIARY.

### The Law About Trespassing Bees.

Now that the bee-and-pear-blight issue is sharp and as the other issue of the bees-and-drying-fruit will soon be on us our readers will be interested to see what a legal writer on the bee side has to say about the law in such cases. Mr. R. D. Fisher makes such an exposition in *Gleanings in Bee Culture*, which we transfer to our columns.

1. **DEFINITION.**—Damages are the indemnity recoverable by a person who has sustained an injury, either in his person, property, or relative rights, through the act or default of another.

2. **GENERAL PRINCIPLES.**—Whenever an injury is done to a right, actual perceptible damage is not indispensable as the foundation of an action; but it is sufficient to show the violation of the right, and the law will presume some damage.

But no damages are recoverable for a mere inconvenience attending the existence of a public benefit; or for any lawful act lawfully done, which, if causing damage, is *damnum absque injuria*; or for any act causing no legal injury, which is *injuria sine damno*; or for an injury caused wholly or in part by the complaining party's own wrongful act, default, or negligence.

3. **NOMINAL DAMAGES.**—Proof of the violation of any legal right entitles the injured party to some damages. If no actual damages appear, nominal damages are given for the technical injury.

4. **SUBSTANTIAL DAMAGES.**—Where actual injury and the violation of a right are proved, substantial damages may be awarded as compensation to the injured party, and in certain cases as punishment to the wrong-doer. In arriving at the proper amount of damages the courts follow defined rules.

5. **REMOteness.**—Immediate or consequential damages may be considered. No one is held responsible for all the consequences of his acts or defaults, but only for those which the law considers the natural consequences. These are either the direct consequences or they are indirect. For all direct consequences, whether they are such as inevitably ensue, or such as have naturally ensued in the particular case, the person guilty of the cause is held absolutely liable. Such damages as the cause produced naturally but indirectly are called consequential.

In case of tort not involving malice, damages may be recovered, not merely for the direct consequences, but for such indirect results as might reasonably be

expected to ensue by a person of ordinary intelligence, or for all the natural consequences of the wrongful act.

6. **PERSONAL PROPERTY; TRESPASS.**—For asportation or destruction of his personal property, so that the owner is wholly deprived of it, he is entitled to recover its value at the time of the trespass. This is the measure of damages for the entire loss of the property. For an injury to it there is a right to a proportionate recovery.

The measure of damages for the conversion of property is the value of the property at the time and place of conversion. The element of damage to be considered in case of injury to the person is the plaintiff's time of loss from business or employment; his loss of capacity to perform the kind of labor for which he is fitted; expenses for medical services, nursing, and mental and physical pain. The same rule will apply to injuries to animals.

We have set out the above principles of damages for the purpose of discovering, if possible, under what branch or branches damages may be recovered for injury or losses in consequence of keeping bees. In a previous article we reviewed the causes of damages growing out of the nuisances committed by bees. In this article we desire to review the rules regarding the bee as a trespasser. One who feels aggrieved by reason of trespassing bees may bring an action against the owner for damages, and may recover upon proper proof and identification of the trespassers for their original act of destruction; and successive actions may be brought to recover for damages for the continuation of their wrongful trespassing; but in all these cases damages are estimated only to the date of the bringing of each suit (101 N. Y., 98).

**CAPACITY TO TRESPASS.**—Courts judicially know that bees can not be stabled as other animals are; that to do so would destroy their value as property. If the owners of houses, grocers, and fruit dealers and fruit raisers were not careless in leaving attractions for them, bees would commit no trespass. They would go to pasture among forests, fields, and amid flowers. But the grocers, fruit dealers and fruit raisers say they are not required to screen against bees if domesticated and regarded as property; that the law should protect them from the ravages of trespassing bees the same as any other trespassing animals. This is true only in so far as identification can be made positive. The instinct of bees is well understood, but their identification is difficult. The relation between fruit growers and bee keepers is said to be somewhat strained. The former claim it to be fair to compel the bee keeper to feed his bees at home in seasons when they would otherwise prove a nuisance and damaging trespassers to his neighboring fruit grower. Whether it would or would not be possible to keep bees at home by feeding them heavily is an open question. But this plan would entail a heavy tax upon the bee keeper. Would it be just to make the bee keeper pay this when, quite likely, the cracked and rotting fruit which the bee would take from the neighbor's orchard has been produced, at least has set, because of the labors in pollination of these same bees? When bees find a fair supply of nectar in the flowers within reach of the hive they prefer that to fruit, and few bees then attack fruit. But it is not at all sure that liberal feeding will keep all of the bees at home, or nearly all of them, from trying to get fruit sugar or juices.

The next suggestion is that of moving away if the cost would be less than feeding. But can the bee keeper get away from the fruit grower? If the extensive fruit grower can sue and collect damages for injuries to fruit on his 1000 trees, the owner of one tree, and 1000 owners of trees within flying distance of an apiary can also collect. If an abundant bee pasture happens to exist a few miles away, the solution is easy and moving is practical. But this is usually of short duration; civilization and improvements, farms and fruit gardens soon follow, and the cry is again, "Move on!" On the other hand, it is claimed that the damages to fruit alleged to be due to bees is too remote and uncertain; and, as already stated, the benefits from pollination are equal to the damages. Few if any cases have reached the higher courts, and the judgments in the lower courts are largely based upon actual damages proved, and identification of the trespassing bees.

**INJURY TO PERSON OR PROPERTY.**—A small son of an Indiana farmer left the team he was driving, near some bee hives, while he chased a squirrel. The horses backed the wagon into the hives, and the animals were so badly stung that they died. The boy was also stung so badly that he lost the sight of one eye. It was complained that the boy's contributing negligence occasioned the injury and resulting damages, and no recovery could be had.

An Iowa farmer maintained a hitching rack at the roadside in front of his residence. Near by, but within his inclose, he kept a number of stands of bees. A neighbor voluntarily hitched his horses to the racks. A swarm of bees settled upon the animals, causing them to break the tethers and run away. In their flight they collided with a team and vehicle going in an opposite direction, and both teams and vehicles were damaged. It was held that the hitching of the horses near the bees was a voluntary act, and the attack by the bees was too remote to



justify a recovery from the bee keeper for the joint damages suffered by the owners of the wrecked outfits.

In the case of Earl vs. Van Alstine (8 Barbour, 630), the New York Supreme Court held that the owner of bees is not liable, at all events, for any accidental injury they may do; that one who owns or keeps an animal of any kind becomes liable for any injury the animal may do, only on the ground of some actual or presumed negligence on his part. It was alleged in this case that defendant owned and wrongfully kept fifteen hives of bees in his yard adjoining the public highway, and that the plaintiff's horses, while traveling along the public highway, and passing the place where the bees are kept, were attacked and stung so severely that one died and the other was greatly injured. A judgment of \$71 was appealed from, and the court, in reversing this judgment, said: "In an action against the owner of bees for an injury done by them to the plaintiff's horses while traveling along the highway where the bees were kept, it appears that the bees had been kept in the same situation for nine years, and there was no proof of any injury having been done by them, but, on the contrary, neighbors testified that they had been in the habit of passing and repassing the place frequently, without having been molested. This rebutted the idea of any notice to the bee keeper, either from the nature of the bees or otherwise, that it would be dangerous to keep them in that situation, and hence he could not be made liable."

If damages be done by any domestic animal kept for use or convenience, the owner is not liable to an action, without notice (13 John, Rep. 339). The utility of the bees no one will question, and hence there is nothing to call for the application of very stringent rules in their case. However, the question whether or not the keeping of bees near a highway subjects their owner to a responsibility which would not otherwise rest upon him has not, to our knowledge, been passed upon.

## THE DAIRY.

### Kafir Corn, Ground and Whole, for Calves.

So much Kafir corn is now grown in the San Joaquin and Sacramento valleys that a recent Kansas experiment has a direct local bearing. Twenty head of young grade Hereford, Shorthorn and Angus calves were purchased by the Kansas Experiment Station during April and May, 1901. The feed of these calves was gradually changed to skim milk, with what grain they would eat, composed of a mixture of whole and ground Kafir corn. It was found that the calves would eat the ground Kafir corn when from ten days to two weeks of age, and would begin to eat the whole Kafir corn when from three to four weeks old. On June 19 these calves were divided into two lots, as nearly equal as possible, the lot to receive ground Kafir corn weighing 1570 pounds, or 157 pounds per calf, and the one to receive whole Kafir corn weighed 1577 pounds, or 157.7 pounds per head. Each lot was fed all the skim milk, grain and hay the calves would eat without scouring. The roughness for both lots consisted of prairie hay only until the calves were twelve weeks old. Alfalfa was then added gradually and for a time constituted one-half of the roughness fed, and later supplanted the prairie hay altogether. Fresh water and salt were available at all times.

**GROUND KAFIR CORN LOT.**—For the 112 days under experiment these ten calves consumed 14,748 pounds of skim milk, 1394 pounds of ground Kafir corn, 2381 pounds of prairie hay, 125 pounds orchard grass hay and 6222 pounds alfalfa hay. The total gain of the lot during the experiment was 1580 pounds, or 1.41 pounds daily per calf. With skim milk at 15 cents per hundred weight, grain at 50 cents per hundred weight (plus 3 cents per bushel, or 6 cents per hundred weight, for grinding), and hay at \$4 per ton, the feed cost of raising these calves amounts to \$47.37, or \$4.73 per head. The cost per 100 pounds of gain is as follows: Skim milk, \$1.40; grain, 49 cents; roughness, \$1.10; total, \$2.99.

**WHOLE KAFIR CORN LOT.**—These calves consumed 14,620 pounds of skim milk, 1641 pounds of whole Kafir corn, 2381 pounds of prairie hay, 125 pounds of orchard grass hay and 5982 pounds of alfalfa hay. The total gain was 1406 pounds, or 1.26 pounds daily per calf. The feed cost amounts to \$47.09, or \$4.70 per head. The cost per 100 pounds of gain is as follows: Skim milk, \$1.56; grain, 58 cents; roughness, \$1.20; total, \$3.34.

Comparing the two lots, it will be noticed that the whole Kafir corn lot consumed 247 pounds more grain, but 240 pounds less of alfalfa hay, and made seventy-four pounds less gain. There were a large number of grains, in the case of the whole Kafir corn lot, that passed through the calves undigested. This experiment indicates that better and more economical gains are made from ground Kafir corn than from the whole grain. Nevertheless, if a man is so situated that he can not grind his Kafir corn, very fair gains can be made with the whole seed. Again, it is possible to feed the ground Kafir corn the first

two or three months and then gradually change to the whole. The weekly weights and gains show that the calves receiving the whole Kafir corn gained nearly as well the last five weeks of the experiment as those receiving the ground Kafir corn. Feed ground Kafir corn until the calf is three or four months old; then, if it is more convenient or economical, the whole Kafir corn may be substituted.

## THE FIELD.

### An Inquiry into Alfalfa Growing.

The Nebraska Agricultural Experiment Station has prosecuted a searching investigation into the growth of alfalfa and the results are very interesting in this great alfalfa State of California, though our conditions are in many respects very different. During the winter of 1902 a list of between 600 and 700 successful alfalfa raisers in the State was collected, and to each was sent a report blank calling for a definite statement regarding a number of the processes he employed in obtaining his stand of alfalfa, and also regarding his subsequent care of the crop. More than 500 satisfactory replies were received, representing eighty counties in the State. A study of this large number of reports from successful alfalfa raisers gives some valuable information respecting alfalfa culture.

**UPLAND AND BOTTOM.**—There are 288 stands reported upon upland, and 273 upon bottom land. Even in the western portion of the State the amount of alfalfa on the upland is shown to be considerable, and very satisfactory results are evidently obtained, although naturally the yields of hay are smaller than on the bottom lands of that region. In the eastern part of the State somewhat heavier yields appear to be obtained from bottom land, but loss from winter killing or other cause is greater. Twenty-three reports state that upland is more satisfactory than bottom land. These come principally from the eastern portion of the State or the irrigated land of the western portion.

An astonishing feature of the replies is the large amount of alfalfa that they show to be growing on land with a clay subsoil. Sandy clay, clay loam, clay and lime, etc., were not counted as clay. In spite of this limitation, 245 clay or gumbo subsoils are reported. A clay or even a gumbo subsoil does not appear to be a barrier to successful alfalfa culture.

**SOWING.**—The seed bed was prepared by plowing and further working in 373 cases, and by disking or cultivating in 75. Among the latter is one method that appears to be popular and satisfactory. This consists in thoroughly disking corn land after all trash has been removed from the field. In the western part of the State there are a number of good stands of alfalfa obtained by breaking prairie sod, disking it, and harrowing in the seed. The latter commends itself as an easy way of supplementing the native grasses in pastures. The tendency to disperse with plowing on unirrigated land increases with the distance westward from the Missouri.

A study of the dates of sowing alfalfa seed in the spring shows a range from early March to late June, although where advice was volunteered it was practically unanimous in favor of early sowing. There were only eight reports of summer or fall sowing, of which one was sown in July, four in August and three in September.

In 108 cases a nurse crop was used, while in 393 cases the alfalfa seed was sown without that of any other crop. The use of the nurse crop was largely confined to extreme eastern Nebraska and the irrigated land of the west. Many persons who used a nurse crop say that they would not do so again. It has been recommended to use a light seeding of small grain, sown earlier or with the alfalfa, to prevent damage by severe winds. When sown in this way the nurse crop is mown when 8 or 10 inches high, to prevent it smothering the alfalfa.

In fifty-five cases the seed was put in with a drill, and in 447 cases it was sown broadcast. This is at least an indication that if a drill is not available a satisfactory stand can be obtained by broadcasting and harrowing in, provided the other conditions are favorable.

There were 138 reports of less than twenty pounds of seed per acre being used, and 336 reports of twenty pounds or more being sown. The evidence seems to be in favor of the use of at least twenty pounds of seed per acre.

Of the persons replying to the inquiries, 221 have stands of alfalfa that yield more than four tons of cured hay per acre each season, while 157 do not get as much as four tons of hay per acre.

**DISKING.**—Of persons having practiced disking alfalfa in the spring or at other times, 138 report that beneficial results have been obtained, while seven report that disking has been ineffective or injurious. By disking alfalfa is meant going over it in the spring with a disk harrow before growth starts, or during summer immediately after cutting for hay. It is customary to set the disks at a slight angle. This cuts the crown root and stirs the soil. Some of the correspondents prefer harrowing to disking.

Where positive objection was made to disking, it was based on the claim that it caused the crowns to become diseased. The great bulk of the evidence was, however, in favor of disking.

**FERTILIZING.**—Of the persons who have manured alfalfa, either by plowing in the manure immediately before seeding or by spreading it on the field after a stand had been obtained, 110 obtained beneficial results, and thirteen found it to be ineffective or injurious. Objections are based on the claim that plowing in manure causes the soil to dry out, but objections to spreading manure on alfalfa are rather indefinite in their nature, except that on low land it makes the growth too rank, and the alfalfa falls down. Many of those who advocate its use specify that the manure should be rotted and fine. One man suggests harrowing after spreading, to fine it. The reports of beneficial results from plowing under manure come largely from the eastern portion of the State, but the use of fine manure applied as a top dressing has proven beneficial in all parts.

## THE POULTRY YARD.

### A Santa Clara Man's Way.

Mr. Franklin Hichborn writes the details of his practice with chickens for Tree and Vine. He says it has been his experience that one man cannot tell another how to raise chicks, although the first may be most experienced and successful, while the second may know nothing about the matter. Experience is the only school worth attending. As I look back to a year ago, to my own start with a single hen, later in the season with an incubator and brooder added, and so on to a fairly respectable flock, I think how fortunate it is that I did not attempt to start on the scale upon which I am now operating. With the flock that I expect to have later, I know I could not now succeed. But as the flock grows in numbers I hope to grow in experience. I have reached that point where the chicks hatched under hens or in incubators grow up to satisfactory hen and roosterhood. The editor of this paper thinks, after seeing them, that chicks and stock look well. He thinks that my way of feeding the chicks may be of interest if not advantage to beginners, for none of them are afflicted with bowel trouble or other diseases that chick flesh is heir to. The feed may be of interest, but the beginner had better study out a feed of his own. I tried what successful poultrymen said was good, and lost chicks by the hundreds by it. My present way of handling was adopted as a sort of self-defense. It has proven satisfactory for me. This is all I have to say to recommend it.

For the first week I feed the chicks a sort of dry mash made up of equal parts of hard-boiled egg, burnt bone dust and bread crumbs. These are rubbed together by hand until they become thoroughly mixed, no one distinguishable from the other. The stuff does not look inviting, but from the start the chicks eat it with relish, and with me they have certainly thrived on it.

The eggs are mostly clear ones that have been tested out from under hens or from incubator, and cost nothing.

The bone is burned in the stove until it will crumble readily. It is then pounded up in a sack and put through an ordinary sieve.

The bread is allowed to get thoroughly dry, until it can be pounded up the same as the bone and pulverized as fine. When prepared it looks like coarse meal.

These three ingredients are then mixed as indicated. It takes some time to mix them, but one can mix enough at a time to last a whole day, and, after all, it takes but seven mixings to get the chicks up to a point where they can be fed something that costs a little more, but is more readily prepared.

During the second week the chicks are fed steel-cut oats. This is really nothing more than coarse oatmeal, and any preparation of oats, even rolled, would answer the same purpose. But steel-cut oats look well, and the chicks eat it with relish. They are during this time fed scraps from the table and the like as variety. From the very beginning they are given, preferably at night, a little finely chopped onion. They are very fond of it and it appears to do them good.

After the tenth day begin to give the chicks a little Egyptian corn and wheat, ground in equal parts in a coffee mill which I have for the purpose. During the third and up to the sixth week this corn and wheat is their principal food. I always arrange so that they have the run of a grass or lettuce patch, and they eat an amazing amount of green feed. They are also given occasionally a little finely chopped meat.

The feed, now that it has been put on paper, indeed seems elaborate, but variety is absolutely necessary to make the chicks "contented," and unless they are "contented" they will not thrive.

After the sixth week I find it safe to feed them the same as I do my full-grown birds—mash in the morning and grain at night, with plenty of room, where there is an abundance of green feed to run about in. If I do not have this green feed run, I would give



them all the green stuff they will eat at the noon hour, the course that I follow with the hen penned up in quarters too narrow to permit of the chickens and vegetation occupying them at one and the same time.

Another point, not of breeding, but one quite as important, may be mentioned before I close—the heating of brooders. When I was learning from books instead of chickens how chicks should be raised I learned that brooders cannot be made too warm. The mildest observation to this end had it that “it is better to have the brooder a dozen degrees too hot than one degree too cold.” Following these directions I wasted gallons of coal oil, and burned up hundred of chicks. I have just learned that a very small flame will run the brooder. The discovery is worth coal oil and chick, and hence dollars, to me. At night, until they are fully five weeks old, my chicks sleep in an artificially warmed brooder; but so little heat is used, particularly after the second week, that the cost is a trifle. There is, of course, danger, and much of it, in getting a brooder too cold. There is quite as much, if not more, however, in getting it too hot. Then, again, there is overcrowding. My brooders are 3 feet square and warranted to hold 100 chicks. I put in as a minimum number forty-five. I used to put in seventy-five, but I am raising chickens now, not maintaining a grave yard.

#### A Large Pigeon Establishment.

Those who approach Los Angeles from the north by railway are surprised at the sight of a very large building covered with pigeons. It is the main building of the bird ranch owned by T. Y. Johnson of Los Angeles, and is said to be the largest in the world. Although this business has been carried on to some extent in foreign countries, says a writer for Country Life in America, it is comparatively new in America. It has succeeded beyond all expectation, and the profits have been large enough to arouse great interest.

Three years ago, notwithstanding the uncertainty of the outcome, Mr. Johnson selected a pretty spot in the Los Angeles river bed, where, among sycamores, willows and alders that outlined the small stream, he erected a number of immense bird tenements, one being 60 feet long, 24 feet wide and 18 feet high. Tiny domestic establishments were arranged in tiers all over the exterior walls, while through the interior ran eight narrow aisles, affording passageway to the inner flats. In the beginning 3000 pigeons were secured as tenants.

The male bird chooses the nest before mating. During the eighteen days of incubation he takes the nest for an hour, both morning and afternoon. The progeny are numerous, each pair of pigeons producing twelve squabs a year. The squabs are allowed to remain under the paternal roof for only three weeks, at the end of which time they are prepared for market. When they are old enough to fly they invariably become thin and tough. At the age of six months those birds which have escaped the stew kettle select their mates and nest. During the past three years the original 3000 birds have increased to 15,000.

September and October are the molting months, and during that time only forty dozen squabs are produced monthly, but during every other month 400 dozen squabs are hatched.

In selecting birds for the market, Mr. Johnson takes the dark-feathered youngsters, as he hopes eventually to have only white birds. Two hundred and fifty dozen squabs, on an average, are sent to market each month, the price of sale ranging from \$1.50 to \$3 per dozen, though in molting seasons, when the birds are scarce, \$10 a dozen is often realized. Mr. Johnson estimates that his revenue from the birds during the past year has amounted to \$12,000.

At present all the lofts are occupied, and some of the more recent home-makers are compelled to occupy humble habitations on the ground. Each week the lofts are disinfected with a solution of carbolic acid, while every nest is sprinkled with insect powder and sulphur, a process the birds seem to dislike.

At meal time the scene on the ranch is one of picturesque animation. Responsive to the first note of a musical, long-drawn whistle from Mr. Johnson, which announces a banquet, the birds flock from every crack and crevice of their tenement. The air is full of pigeons. To feed this flock of 15,000 birds requires twelve sacks of screenings, eight sacks of grain and an immense quantity of boiled meal each day. During the week three or four barrels of stale bread are soaked in water and added to the menu. The cost of these provisions amounts to \$15 per day, which is at the rate of \$5475 per year.

The birds never stray beyond the wire boundaries of their home, seeming quite content with the narrow confines of eight acres. Convenience and comfort are carefully considered, and every morning straw is strewn on the ground, that the birds may build new nests if they desire. The life of this interesting bird city is one of unending contentment, undisturbed save when a predatory hawk or rat appears upon the scene. Fourteen to sixteen wagon loads of guano

are removed from the premises each year, and the great bulk of feathers taken from the marketable birds are utilized by the upholstery departments of furniture factories.

## THE STOCK YARD.

### Are We Making a Mistake in Neglecting the Holstein Cow?

By E. A. GAMMON at the Courtland Farmers' Institute.

The subject of this paper is in the form of an interrogation. To at all arrive at a position in which we may answer either affirmatively or negatively it becomes us to somewhat examine into our conditions and our adaptability for stock raising, dairying and their kindred pursuits. If after a somewhat hurried examination we find that it is quite likely that the growing of stock for one or more objects will be conducted by us, then we have gained a vantage ground from which we can study the characteristics of the different breeds of cattle and by comparison, elimination and selection choose the one breed that seems to combine more of the virtues and a less number of faults for the one which we propose to propagate.

When we have done this, and only then, will we be able to answer the question, “Are we making a mistake in neglecting the Holstein cow?”

WHAT TO DO WITH RICH LOWLANDS.—We have a vast acreage that seems not well adapted to fruit growing, neither does it entirely answer the requirements for the market growing of vegetables. Some kind of hay crop or grain crop will flourish, but these alone do not seem to give a just return from this rich bottom land.

If we turn to alfalfa and add to our interests that of stock raising in some form, then we have an element not yet met with in a hay crop alone and one quite likely to give a fair return that will in a measure satisfy our demands.

It appears, however, from facts that an added acreage to the one above mentioned is now actually being used for stock raising which would readily bring an annual rental of from \$10 to \$20 per acre. Now it has been said, and repeatedly so, that no one can afford to raise stock on such valuable land, and we believe that position can not be assailed so long as the prevailing kind of stock is indulged or tolerated. But as soon as we make selection of a different type of animal then our conclusions may be wrong, so far as practicability is concerned, and we believe it can then be maintained, without a doubt, that stock raising can be made to pay, and that well.

WHAT HOLLAND DOES WITH SUCH LAND.—Take for example Holland, where land is rated at from \$500 to \$1000 per acre. Intensive culture is practiced; not a foot of land is wasted; and yet people have followed dairying successfully for centuries. For a single year, without taking into consideration home consumption and sales to other countries, Friesland exported to England an average of 205½ pounds of butter for all the cows, both old and young, owned in the province. No other country could equal this.

WHAT ARE REQUISITES.—To successfully carry on stock raising in some form let it not be forgotten that we must make careful selection from adaptability to our needs, and not because we have a fertile region and luxuriant pastures, for a moment suppose that “any old thing” will do. Our fields, as a rule, are small; in some instances soiling is practiced (an admirable plan), and the kind of animal we desire is one that will readily accommodate itself to environments, and supply a large amount of milk, butter, cheese, veal and beef. We need an “all-round” animal, and yet one that excels particularly in a variety of ways. With the high price of beef taken into consideration, which we see no reason for even suspecting a change, as persons competent to judge estimate the deficit in beef animals alone in this country to be not less than 10,000,000 head, we are still confident that statistics will emphasize the truth that beef alone cannot compete successfully with the more finished products, as milk, butter and cheese, in districts where any or all of these can be produced.

HIGH CLASS PRODUCTS ESSENTIAL.—This is true of any industry; a finished and more highly organized product is bound to outsell a crude one and, other things being equal, the increment of gain is reinforced. On the other hand, however, we are not willing to admit that with our conditions for rapidly maturing beef animals, and our superior market advantages, that it would be an impossible accomplishment to successfully devote our attention to the development of a strictly beef animal. We will go even further and say that it is our opinion, even on our valuable lands, that were one to devote his best talent and resources in the line of producing a finished product for the block a highly remunerative business might be established.

HIGH PRODUCERS MUST BE WELL BRED.—Now, reverting to our first conclusion that stock raising can be successfully conducted under our conditions, and at the same time not losing sight of our milk, butter and cheese animal on the one hand, and our beef animal on the other, we believe it can be maintained

that under the hap-hazard and frightfully disorganized and unsystematized method of growing any and all kinds of animals, and the extreme rarity of finding thoroughbred males in herds must result in inevitable loss and failure. And right here, while passing, let me refer to the matter of thoroughbred males, as it can not be too strongly emphasized. A position that cannot be assailed and one taken by every exponent of stock breeding in the land seems to be habitually transgressed. When we now can obtain the best of pure bred sires both cheaply and conveniently in this country there can be no possible excuse for breeding to a cross, mongrel nor a scrub. This is true whether applied to poultry, cattle, horses, sheep or swine. By the selection of a desirable sire breeders competent to judge state that fully one-half is added to the value of the offspring.

THE PREMISES ESTABLISHED.—We have now the following deductions before us: First, stock raising of some kind can be successfully conducted under our conditions; second, the growing and development of a milk, butter or cheese animal will be highly remunerative; third, the production of a finished beef animal for the block is quite likely to prove successful.

Can we not look further into these conclusions and perhaps so eliminate that we will have left but one premise for our further investigation? We are desirous of securing an animal that will produce a large quantity of milk, from which can be made much butter or cheese, and also to have a by-product of such quantity as to make it very valuable for the raising of calves and swine. We also desire an animal with a large carcass that can readily be converted into beef. Is it not possible to find an animal in which these extremely desirable qualities are combined?

THE HOLSTEIN-FRIESIANS.—We believe that in the Holstein-Friesian cow we have such an animal, and when put to the test will come up to every requirement. We believe she will stand the closest scrutiny, nor will you find her blushing for fear the above inspection may reveal some excellent point deficient or lacking. We are thoroughly convinced of this because she has always made converts when investigation has been resorted to, and we are yet to hear of the breeder of the pure black-and-whites who has ever put her aside and she has been obliged to take up with a second love. It were better could we add the same tribute to the constancy of some other than this true example of the bovine class.

CROSS-BREEDING AN UNCERTAIN COURSE.—The Shorthorn, Jersey and Holstein only we assume enter into our deliberations when we are casting around for a breed of cattle that we propose to develop. Some may ask the question why not make a cross between some two of these breeds or even add a third element into our own admixture? The answer of all experienced breeders is, do not do it. At its inception we are working largely against dame nature and the inherited and acquired characteristics through long years of development. Each of these breeds has tendencies that are, to a very large extent, peculiar to its kind and class, and are we in a position to say that the desirable qualities that we wish perpetuated will find their affinity in some cross with an entirely different animal, perhaps the counterpart of the one in hand? It seems to me that it would be presuming, to say the least, and in experience this cross-breeding has proved a delusion and a snare. We sincerely believe that the failures and poor results largely attained in stock breeding are attributable to this source. But by one cross we can obtain untoward results that a lifetime is far too short in which to make complete restitution. All reputable breeders persist in discouraging the system. After the first cross, should a desirable animal be secured, what basis has the breeder then acquired from which he can expect to perpetuate this animal or the desirable qualities in it manifested? None whatever; and should he be reasonably content with the get of this first cross so far as milk, butter, cheese or beef is concerned, what kind of a herd do we find him in possession of? A mongrel one, mottled and containing a representative of every conceivable color, size and shape; one that is unsightly and to which one cannot add sufficient of his esthetic nature to bring out those qualities which are imperatively demanded to perfect any type of animal. Experience has taught that only in the first cross is it possible to secure an animal at all desirable, and consequently we are obliged to go outside our own herd and purchase cows from which to continue this hazardous undertaking.

(TO BE CONTINUED.)

We hear that Luther Burbank of Santa Rosa has been notified that a gold medal has been awarded his exhibit made at the recent Pan-American Exposition. There were no premiums for exhibits such as Burbank made—that of hybrid fruits—but a special medal was awarded for his combination fruits, the plumcot being considered the most wonderful by the judges. This plumcot is certainly a most wonderful and desirable fruit. An illustrated account of it was given in the PACIFIC RURAL PRESS of March 9, 1901. This is one of many things which Mr. Burbank still has under his control, and the things which he still has under training may prove greater than any which has been given to the public.



## Agricultural Review.

### BUTTE.

**CONCERNING CROPS.**—Oroville Register: Scott Whipple of Wyandotte reports that the cool weather of late is just what farmers in the foothills needed. The hay and grain have filled out fast in the past two weeks and he thinks there will be an excellent crop of hay.

**BIG WHEAT SALES BY FARMERS.**—Gridley Herald: During the past week a number of Gridley farmers have let go of their wheat holdings, and the aggregate makes up a large amount. I. N. Ramsdell purchased from J. F. Shaffer 9000 sacks of 1901 wheat, paying 1 cent per pound for the lot, and F. G. Moesch purchased 21,000 sacks from a pool of farmers made up as follows: Peter Weber, Harrison Miller, T. B. Channon, J. F. Channon, F. Hazelbusch, J. C. Richardson, Samuel Davis and the Scammon estate. The price on this lot was from 98c to \$1 per cental, according to the quality of the grain. On Saturday of last week Mr. Moesch bought 400 tons of wheat at Biggs and 100 tons at Live Oak.

**PUMP FOR THE REED ORCHARD.**—Last Sunday the big pump which is to be used for irrigating on the Reed orchard, near Gridley, was loaded onto a wagon from the freight platform at this place and hauled to the ranch. The pump and its connections made a load for two four-horse wagons. The motor will be attached to the end of the pump shaft, and, touching a button, starts the water to coming up at the rate of 2500 gallons a minute, which means 3000 barrels of water every hour, or 72,000 barrels per day, which is equal to a rainfall of 1 inch on about 130 acres.

### FRESNO.

**VINEYARDS LOOKING WELL.**—Scandinavian Colony Correspondence Republican: Prospects are good for an abundant yield of grapes this fall. While, of course, all know that "there's many a thip 'twixt the cup and the lip," the passing of the spring without a damaging frost has caused great and continued rejoicing. True, the vinehopper must have his "pound of flesh," as also the cut worm, rose bug, California Wine Association and other juicy vegetarians, but it would seem that nothing short of an unforeseen calamity can now prevent an enormous flow of the red and rosy wine. Should the marketing of the product be arranged as hoped for by our growers, their persons will once more be decked with the diamonds that have so long wasted their brilliancy in the pawnshops. The directors of the San Joaquin Wine Association are not letting the grass grow under their feet. Important negotiations for the purchase of land for a winery site are pending.

**ALFALFA IS KING.**—Sanger Herald: We are informed by a farmer in this vicinity that alfalfa will sustain an average of at least three head of matured live stock to the acre the year around. A 40-acre tract of alfalfa will feed a dairy herd of forty cows and their calves and four head of horses the year around. It is the report of experts that 100 cows can be cared for in this county with less cost than can thirty-five cows in the dairy districts of the Eastern States, the cows giving an equal quantity of milk, and the profit from this product equaling or exceeding the Eastern product. As many as five crops of hay have been harvested in one year from an alfalfa patch in this vicinity. Now that the creamery is an established fact, insuring a ready sale for all the milk that can be produced on the dairies hereabout, the acreage of alfalfa, as well as the herds of cows, will be greatly augmented during the next four years.

### LOS ANGELES.

**THE OLIVE CROP.**—Times: The olive growing company operating at San Fernando has just let the contract for building a large warehouse to accommodate the output of olive pickles and oil now ready for the market. The building will be of concrete. While most farmers have been quietly pulling up their olive trees for several years, the San Fernando growers have been patiently awaiting the day of their triumph. It has come, and as the phenomenal crop of the season proves.

### MONTEREY.

**PROLIFIC BARLEY.**—Salinas Index: There is on exhibition at the Chamber of Commerce rooms a stool of 135 stalks of barley about 3 feet high, all from one kernel of grain. The prolific specimen is from the ranch of E. Blohm, near the Spence switch, about 6 miles southeast of Salinas.

### RIVERSIDE.

**CROPS AT IMPERIAL.**—Imperial Press: It is estimated that on May 1 there were 6313 acres under cultivation in the Imperial valley. More than half, 3572 acres, was in barley. Of alfalfa, there were 1488 acres, 391 acres of wheat, 69 acres of oats and 793

acres of other crops, consisting largely of sorghum and millet. At the time of taking the census the winter seeding was about ended and the summer season just begun. Preparations are being made for putting in a large summer crop, and the acreage under cultivation will probably be doubled in the next three months. The total of the crops which will likely be cultivated during the year 1902 is estimated from 15,000 to 25,000 acres.

### SAN BERNARDINO.

**APIARISTS ARE RATHER BLUE.**—Enterprise: Reports which come in from the country are to the effect that, on account of the failure of the sage to bloom, there will be a very small crop of honey this year. Those apiaries situated near orchards will do well, while those in the canyons and hills will suffer. Many apiarists are contemplating moving their stands near town to get the benefit of the orange bloom.

### SAN JOAQUIN.

**RAISING CHERRIES UNDER DIFFICULTIES.**—Lodi Sentinel: But few cherries are grown in this vicinity, and it is almost impossible to save the crop from the depredations of the birds. In some instances the trees are covered with netting, which protects the fruit from the hungry feathered tribe, and a few resort to guarding the trees with a shotgun while the cherries are ripening. Good cherries can be grown here, but it is not likely to become a leading industry.

**SHORT GRAIN CROP ON WEST SIDE.**—Stockton Independent: About the only place in the northern part of the San Joaquin valley where there is any uneasiness over the grain crop is on the West Side. There was not sufficient rain there to carry the late wheat and barley through and it now looks as if there will be a very light crop of the winter sown. A letter received from a farmer residing near Banta conveys the information that the summer-fallow will fill out and make a fair crop, but no one in his neighborhood anticipates much of a yield from the late grain.

### SANTA BARBARA.

**SHORT CROP.**—Press: The crops of hay and grain are not as good along the coast as they should be for the amount of rain so far received, and if more rain does not come soon there will be great shortage in both the cereal and hay crop. Not only is the region along the coast, having a southern exposure, thus affected, but all the late sown crops throughout the county will suffer and fall far short of a paying yield. Especially will all late sown mustard fall short. Two inches of rain at this time would make a difference of 30,000 bags in production, if the acreage was equal to that of 1901.

**LARGE BLUE GUM TREE.**—Lompoc Record: A. M. Hoel of Goleta delivered a cord of wood in this city to-day which he says was the last of fifteen cords cut from a single gum tree on his premises. The tree was planted twenty-six years ago by B. F. Pettis of Goleta, was 5 feet in diameter and 111 feet in height. Mr. Hoel received \$9 a cord for the wood, or a total of \$135 for the entire tree. He is satisfied that growing gum trees for fuel purposes can be made a very profitable business.

### SANTA CLARA.

**THE FRUIT CROP.**—San Jose Mercury: Fruit crop prospects may be summed up in one word, "Good." Reports from all parts of the valley tell of heavily laden trees as a rule. About Gilroy, Rucker and Morgan Hill it is said there will be the largest yield on record. The chief fruits grown in that part of the valley are prunes, peaches and apricots, with smaller quantities of all varieties. Last year some sections of the southern part of the valley had practically a failure of crops, all the valley suffering more or less. The Almaden road country suffered much last year also. This year there is promise of a big output. In spots prunes have been blighted and dropped from the trees, but if what remains goes to maturity there will be a good crop of extra large prunes. All other fruits in this section promise well. The same condition exists in the Willows and Campbell section and on the West Side generally. The Willows and Campbell section is the great cherry producer of that part of the valley. In black cherries there is promise of the biggest crop in years. White cherries will not be so heavy. The East Side and the Berryessa district promises a big crop. The canker worm has done some harm in the Berryessa district, but is not great, and growers have about destroyed them, according to reports. The foothill regions in all parts of the valley promise big returns of all kinds of fruits grown. The northern part of the valley promises good crops. It is this section especially where the greatest output of pears comes from. This crop promises well, according to reports made. Growers say that it is too soon to tell definitely what this season's

output will be, but conditions and promises now are as given.

**HENS AND MEASURING WORMS.**—Orchardists in the vicinity of Edenvale are busy cultivating their orchards and fighting measuring worms. A few orchardists who have filled their orchards with chickens report very few worms. Mistress hen seems to be a very efficient co-worker in the orchard.

**TERRIBLE ACCIDENT TO A FARMER.**—Herald: George Reeves, an orchardist, who resides in Union district, about ten miles out of Los Gatos, in the mountains, was engaged in blasting stumps with dynamite and he had set a fuse and ran away, but the cartridge did not explode as soon as he thought it should. After waiting a short time he returned to the stump. As he was bending over the stump to examine the charge the dynamite exploded with awful results. The fuse had hung fire. Mr. Reeves got the full force of the explosion. He was thrown quite a distance into the air, and when picked up it was found that he was terribly lacerated. Three of his extremities were blown off. His scalp was partly torn off and his right ear was missing. Dr. Walker of Los Gatos was summoned and he brought Mr. Reeves to the county hospital. There, under the direction of Dr. Gerlach, both of the legs of the victim were amputated, one above and the other below the knee, his left arm had to be removed and also two of the fingers on the right hand. His scalp and head were found to be terribly lacerated and great bruises and cuts were found on his body.

**FRUIT PRICES.**—Gilroy Gazette: S. R. Coombs, representing the California Fruit Cannery Association, was in the Walters Colony district last Thursday. It is reported that he offered \$20 per ton for green peaches of at least 2½ inches. It is understood that the Association will take contracts for cling varieties on this basis for from one to five years.

**PROSPECTS FOR PEARS.**—A prominent horticulturist, Irweng Tobar of San Juan, informs us that the crop of Winter Nellis pears in that valley is a total failure. He attributes this to the fact that the blossoms failed to set. As regards Bartletts, apricots and peaches, the trees are loaded with fruit.

### SANTA CRUZ.

**FRUIT NOTES.**—Pajaronian: Apple trees are in good condition this spring and a heavy crop is anticipated for Pajaro valley this fall. Several orchard sales have been made this month, at prices averaging as good as those of last year. The apple contracts made so far this month will run close to \$75,000. The Missouri Pippin, which has been a good seller the past three years, and which ranks with the best keeping apples grown in this valley, is said by our local packers to be the most free from codlin moth of all varieties of apples grown here. There have been some reports of canker worms in Pajaro valley this spring, but no serious damage has resulted. The worms that have hatched out are large and are feeding upon the foliage of fruit trees. The trees should be shaken so as to dislodge the pest, and a bandage of heavy paper thoroughly coated with molasses or coal tar wrapped about the trunk of the tree will prevent them from crawling back. This method is the cheapest way of disposing of canker worms, but a spray of Paris green will prove beneficial. The blackbird, which was at one time almost universally despised, is growing in favor with fruit growers, who now realize that the bird is an active pest destroyer. Many of the leading fruit growers in this valley believe that if the blackbirds were protected they would solve the canker worm problem.

### SOLANO.

**ALL CROPS IN FINE CONDITION, EXCEPT ALMONDS.**—Republican: Fruit and grain crops in this locality were never more promising. There will be full crops in the orchards of everything excepting almonds. Some varieties of these are light in some orchards. Shipping plums are a heavy crop, as are cherries. Other fruits are a full crop and are well distributed over the trees. The rain injured a few of the earlier cherries, but the damage is slight and benefits received by other fruits will compensate for this damage. Prunes are a full crop here in spite of the reports of failure recently made in the metropolitan papers. All early varieties are much later than they have been for several years. Grain is in excellent condition. The late rains have bettered the already good prospects and a heavy crop will be harvested. Some hay was damaged by this week's rain, but, compared to the benefits, the damage is very slight.

### SONOMA.

**SHERIFF SELLS HOPS.**—Santa Rosa Press-Democrat: Sheriff Grace held a sale on Wednesday under foreclosure of mortgage in the action of the Santa Rosa

Bank against Burgess and others. Some interest was taken in this auction, provided by law, owing to the fact that 253 bales of hops were brought under the hammer. There was some discussion among hop men prior to the sale as to the figure that would be realized. The hops were sold to Wolf & Co., and the price obtained was 14 cents per pound. The hops were last year's crop. The price is considered a good one.

**DUTTON RANCH SOLD.**—"Roseland," the old Warren Dutton ranch of 307 acres on Sebastopol avenue, has passed into the hands of James H. Gray, a recent arrival from Minnesota. The price paid is said to be nearly \$50,000. The fine pear and prune orchards on the estate are among the most noted in this section.

**THE PRUNE CROP.**—Sebastopol Times: The reports circulated last week regarding the damage done to the prune crop in this county by the recent rains appear to have been grossly exaggerated. The consensus of opinion among farmers and fruit growers generally is that the prune crop this year will be fully as good as last, while the present indications are that in size and quality the fruit will be better than last season. While it is undoubtedly a fact that in certain sections many of the buds are dropping, more than enough remain to insure a crop fully up to the average. In other localities the stand appears to have been affected very little, if at all.

### SUTTER.

**ALMONDS IN DEMAND.**—Independent: The local almond growers are jubilant over the prospect of big prices for almonds the coming season. A firm from the city has purchased the O'Connor crop in Chico and paid 10½ cents. The local growers are holding for 11 cents and expect to get this figure.

**WAGES FOR THINNING FRUIT.**—The orchardists hereabouts have not as yet experienced any trouble in securing labor to thin fruit, \$1.25 to \$1.50 per day being paid by most fruit growers to thinners. This is certainly fair wages, and no one should go begging for work or for money at this season.

**SHIPPING CHERRIES.**—Sutter County Farmer: The cherry crop is coming on well and is one of the best this section has seen for years. J. B. Wilkie has purchased the crops of J. C. Gray, O. A. Wilbur, A. G. Bremer, J. H. Backus and one or two Chinese growers, which, with his own, will make about seventy tons. The Giblin Bros. will have at least thirty tons, and this comprises about all the crop in this locality. We understand that they have sold the bulk of the canning cherries to canneries below. Mr. Wilkie is shipping several tons per day to various points and the Giblin Bros. are also doing considerable shipping. The local market quotations are from 4c to 6c per pound.

### TEHAMA.

**TO THE EDITOR:**—The weather has been cloudy for the past two days and a heavy rain fell Monday night, May 12th. All kinds of crops look exceedingly well, considering the late spring. The cherry crop is unusually heavy and will be ready for market in about four weeks. The apple and prune crops are very heavy, also peaches and pears. There is very little danger of frosts now, and the fruit market bids fair to be very good this year.—ALICE N. HAZEN, Manton.

### TEHAMA.

**SALE OF MUTTON SHEEP.**—Red Bluff News: J. J. Flynn made a sale of about 500 wethers last Wednesday to Charley Johnson at \$2.75 per head. The sheep are to be delivered between the 15th and 20th of this month. Mr. Flynn will start his remaining sheep for the summer range in Trinity county as early this year as he can.

### YUBA.

**AN AMERICAN GROWS VEGETABLES.**—Marysville Democrat: Thomas Williams, lessee of the Dunning land two miles east of town, is the first American citizen to engage in the growing and marketing of vegetables for this city to any noteworthy extent.

**Horse Owners! Use**  
GOMBAULT'S  
**Caustic Balsam**  
A Safe Speedy and Positive Cure  
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blomishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular.  
**THE LAWRENCE-WILLIAMS CO., Cleveland O.**





## THE HOME CIRCLE.

## No Escape.

How sweet the soporific ways  
Of somnolent old ships  
That sailed for days, and days, and days,  
On transatlantic trips—  
Not o'ean greyhounds, wild to race,  
Along at hydrophobic pace!

The weary man of business then  
Had time to be a boy,  
And play at simple games again,  
Or rest with grateful joy.  
No leisure now to loaf or laugh,  
Pursued by wireless telegraph!

From zone to zone, from shore to shore,  
'Twill compass him around,  
Till relaxation nevermore  
On shipboard may be found.  
Staccato, nervous, hard and quick,  
The restless telegraph will click!

As ships will print a daily sheet,  
If he's a noted man,  
His snapshot portraits he must meet  
As calmly as he can;  
The blithe reporter'll be there, too,  
And life one glad, long interview!

The dawn may bring a home despatch—  
"The children have the mumps."  
He'll read at breakfast, snatch by snatch,  
Which way the market jumps;  
And frantic tars he fain would fight,  
Will yell their "Extras" day and night

—Anna Mathewson, in Life.

## They All Belong to Me.

There are riches without measure  
Scattered thickly o'er the land;  
There are heaps and heaps of treasure,  
Bright, beautiful, and grand;  
There are forests, there are mountains,  
There are meadows, there are rills,  
Forming everlasting fountains  
In the bosom of the hills;  
There are birds and there are flowers,  
The fairest thing that be—  
And these great and joyful dowers,  
Oh! "they all belong to me."

Oh, privilege and blessing,  
To find I ever own  
What great ones, in possessing,  
Imagine theirs alone!  
Oh, glory to the free Maker  
Who gave such boon to hold,  
Who made me partaker  
Where others buy with gold!  
For, while the woods and mountains  
Stand up where I can see,  
While God unlocks the fountains,  
They all belong to me.

—Eliza Cook.

## Grandmother's Lark.

Grandma Deering stood at the parlor window with a brave smile on her face, waving her hand valiantly while they all drove off. "They all" were her son John Deering, his wife Emmeline, and their four children. They were going to the State Fair at Miller's Grove. They had not asked grandma to go, nor even whether she wanted to go, but they had said, laughingly, as they packed themselves and the big lunch basket into the carriage, "It's lucky grandma isn't going, because there wouldn't be room in the 'democrat'."

During the weeks that the air and the conversation had been so full of "Fair," grandma would not admit, even to herself, that she wanted to go; but somehow those words, "It's lucky grandma isn't going," struck a chord that vibrated strangely.

When the last little fluttering handkerchief had disappeared around the corner, grandma turned from the window with a sigh. The whole, long day was before her. She looked about the cosy parlor in which were many things brought from her own housekeeping in the old-fashioned place where she had reared her children. There was her husband's picture, oil painted, in an oval gilt frame, and under it the wreath which had lain on his coffin. Emmeline had had the wreath waxed and mounted for her mother-in-law. There was her husband's solid mahogany easy chair which Emmeline had cushioned with that bright colored velvet. It had been hard, so hard, to break up that old home, and the wisdom of doing it was not clear to grandma even now.

To be sure, she was all alone. Jennie and Laura were married and living in a distant State, and John and Emmeline did not care to live in the old house.

Yes, she was all alone, but still she was strong—strong enough, at least, to look out for herself, and do her own work in her own leisurely fashion. She had never been a rusher like Emmeline. But John and Emmeline said she got tired; or rather, Emmeline said so and John agreed. But what if she did get tired? Didn't she have all the time she wanted to rest? Vain questioning and useless logic when Emmeline had made up her mind.

Grandma came to John's and brought some of her things, but she never could tell whether it was pain or pleasure she felt at seeing them there in that new-style parlor. It was like Emmeline's brisk conscientiousness to put them there to show that John's mother was welcome to the best. Yes, Emmeline meant to be real kind, only—There was a sudden loud knocking at the back of the house. Grandma stood transfixed. The knocking was repeated.

"It most seems as if it was a warnin' to me for bein' so unthankful for all my mercies," she murmured nervously. I wonder how it can be. Everybody knows it's Fair day and they're all gone."

"Hi, hi, hi! Hi, hi, hi!"

Grandma Deering almost doubted her own ears, but she hurried to the back door. "Is that you, Bob?" she inquired, cautiously.

Reassuring response came in a boy's hearty imperative. "Course it is. Open the door, quick!"

When this was done, a sturdy figure in a golf rig took a flying jump and landed in the middle of the kitchen, making the empty kettle on the cold stove hop with surprise, and causing Emmeline's row of bright tins standing primly on the dresser, to slide down with simultaneous protest.

"Bob, Bob," laughed grandma, as she ran to set up the covers, "you stop your capers. What did you come back for?"

"You!" The lad took two strides nearer the dresser, thrust his hands deep into his pockets, and watched to see the effect of this piece of news.

The effect it had was to twist grandma about in a hurry, to set a stare of incredulity in her brown eyes, and dash quite a pretty shade of pink into her cheeks. "Me? Me?"

"You!" beamed the young fellow, in supreme enjoyment of the scene.

"Me?" Grandma repeated the word wonderingly, with a vague feeling that this must be one of Bob's jokes. The steady gray eyes looked honest, though.

"Yes, you, you, you! You wanted to go to the Fair. I saw it in your eyes when we all drove off, and I just said to myself, 'She shan't stay there alone, all day, not if I know it,' so I came back for you."

The pink flush deepened into crimson. "I didn't mean that anybody should know. I'd—I'd just as lief stay home. What will your mother say?"

"O, she won't say anything. I just told them that I'd got to go back to the house for something and that they needn't wait, because I'd go on the electric." Bob took his hands out of his pockets and straightened his broad shoulders with the air of a capitalist. He hadn't been bell boy in the big hotel all summer for nothing.

"And was I what you came back for?" Grandma put the question tremulously. It was all so strange, so very strange.

"You see," the big boy was twirling his plaid cap by the button now and looking decidedly shy. It wasn't so very easy for a fellow to come to the point and reveal himself, after all. "You see, there was an awfully nice old lady—I mean a lady at the hotel this summer, and she somehow made me think of you—only she was different, somehow. She had a grandson, too, about my age, and they were great chums. They used to go off together on some lark or other every day. She always wore a short skirt and a shirt waist, except when she went down to dinner, and she went out in all kinds of weather, just like the girls. I heard

some of the ladies talking about her, out on the piazza one day, and they said she was a school teacher and that she was educating that grandson. My, but he thought a heap of her!"

Bob stopped and looked bashfully at his grandmother. She was sitting with her hands clasped on the kitchen table, looking at the boy, and drinking in every word he said. Her brown eyes were shining with a new light.

"And did that grandmother have white hair?" she asked, eagerly.

"Yes, she did, but it wasn't curly like yours," nodded Bob.

"And she was wrinkled?"

"Some. As much as you, I guess. You aren't hardly wrinkled any." Bob made a brave attempt to look his grandmother squarely in the eye when he said that. "Anyhow, she wasn't as pretty as you, only she seemed—more—well, used to things, you know." Then Bob gave over trying to make this meek little home-keeping body understand the difference between herself and that other most modern of grandmas, and asked, anxiously, "Do you suppose you could be ready for that half past nine electric?"

Grandma rose confidently, but suddenly her enthusiasm failed. "But the money, Bob," she said, humbly. "I haven't any."

"Well, I have," returned the boy, promptly. "I haven't been working all summer for nothing. I guess a fellow with seventy-five dollars in his inside pocket, so to speak, can afford a quarter or so to take his grandmother to the Fair. Now hustle!"

The assurance that the money was forthcoming, and Bob's assumption of masculine gruffness, made grandma laugh. She scuttled across the kitchen as gleefully as if her last birthday had not ticked off "sixty-nine." Upstairs—shall I tell it? O, yes, I might as well—up stairs she looked at herself in the glass for as much as two minutes. Then she pulled the wavy white hair down around her temples and ears in soft full curves, observed that there was pink in her cheeks and, yes, red in the lips that smiled at the glass and noted that her figure was slender. Why, she was as slender as Flossie, her granddaughter and about her size. Would she dare? Didn't that other grandmother do it?

"Land of the living!" Bob Deering took his teeth out of a huge slice of gingerbread to make the exclamation, and then whistled shrilly.

The girl in the blue golf skirt and pink shirt waist with the becoming black velvet stock, put her blue and white straw outing hat the least bit to one side, and laughed. "Do I look nice?"

"Nice? I should say you did!" The reply was prompt, and the steady eyes did not belie the words.

"And—and—do I look as young as that other grandmother?"

"I should say you did! Younger! Why, you don't look a day over sixteen!"

Grandma Deering laughed aloud. Why, how many times had she laughed out loud within the last half hour? "Now, Bob, that's altogether too much," she declared. "But, do you know, I feel young. Why it wouldn't surprise me one bit to hear somebody say, 'There's Debby Haskell going to the Fair with Bob Deering.'" Then she added, wistfully, "You look just the way he used to when we went to school together."

Bob gave his grandmother a queer look. He had learned several things since he jumped out of that carriage a few minutes before. One was that hearts stay young, if bodies do grow old.

"Are we walking too fast for you?" he asked, kindly, as they hurried down street.

"No, oh no, not a bit," responded grandma, radiant but breathless. "I didn't know—I never thought of such a thing as me ever enjoyin' anything again, except my victuals."

She was walking along as lightly as a girl, in her short skirt. The soft September air falling upon her face, the sight of the fields and the trees and the bright blue sky, the sense of freedom and adventure, filled her with a sort of ecstasy. "I'm ever so much

obliged to you, Bob," she said, shyly, looking up.

He looked down, caught the exultation of her mood, and nodded his head, confidently. "I knew you were the girl for a lark. Hi, hi, hi! Wait a minute!" Bob ran to head off the electric car that was whizzing along the highway at right angles.

The motorman and conductor, yes, and all the passengers smiled at the pair who clambered aboard. It was a nice smile, too. Perhaps they did not know all the story, but they could see that there was a boy whose heart was in the right place. All the world loves a loving heart.

Such a gay, laughing, chattering crowd! How they did push and rush, to be sure! At the entrance to the grounds Grandma Deering slipped a timid hand around Bob's arm. It had been so long, so very long, since she had been out of Emmeline's prim parlor except to Sunday morning meeting, that she was frightened. But Bob put a strong, friendly hand over hers, and said, kindly, "Now, don't you be afraid, grandma. I'll take care of you, I guess. I know just where to find the folks."

Across the grounds where the people from "Dover way" were wont to gather, the Deerings, just arrived, were folding the carriage dusters and disposing of their lunch baskets. One of the five-year-old twins was the first to see the pair slowly sauntering along. "Mamma! mamma!" she exclaimed. "There's Bob and somebody with him. Somebody that looks like Flossie."

Flossie turned quickly, stared at the person who looked like her, and shrieked, "Why it's grandma!"

Then there was a rush. And if Grandma Deering had been having any doubts about her welcome, she was speedily relieved of them.

After explanations and a relay of cookies, the children bore their grandmother off to see the sights. Although she had visited many fairs in her life, she was sure that she saw more funny things and more curious things that day than she had ever seen before. She had almost forgotten that gypsy camps, shooting galleries, militia bands, dancing bears, abnormal vegetables, and vainglorious prize cattle were objects of such breathless interest. She was glad to see things through the eager eyes of the little children who took her so joyously into their happiness and she caught their hands with a closeness that surprised them, but which meant to her that she would keep in their lives for whatever of love and sympathy and helpfulness she could give and get.

It was a very tired but thoroughly happy grandma, whom Bob helped into the democrat that night, and it is quite certain that he heard, although he never pretended to, a whispered voice, which said, "I'm ever so much obliged to you, Bob. It was a lovely lark."—The American Boy.

## How to Preserve Good Hearing.

Do you want to be able to hear well, even if you live to be ninety or one hundred? Then keep the outside ear clean and let the inside alone. Nature has furnished a cleaning apparatus for the ear passages. Don't tamper with them. The entrance to the auditory canal is guarded by fine hairs that keep out dirt and insects. In the lining membrane of the canal is an oily, yellow wax that is bitter to taste. On account of this bitter wax no insect will of its own accord enter the canal. It is only by accident that an insect ever gets in the ear. The quickest way to get rid of it is to drop in a little sweet oil. This will either drown it or frighten it out.

The wax in the ear is absolutely necessary to keep it in a healthy condition. Never try to get it out. Always remember that nature will not let the inner ear become dirty. Never insert the end of a wet towel or cloth into the ear to try to wash out the wax. Washing the auditory canal with soap and water is also injurious, as in this way the wax is moistened, and more easily collects dust and dirt. It is dangerous; and if persisted in surely produces deafness to scratch



the ear canal with pins, toothpicks or hairpins.

Never put cold water or any other cold liquid in the ear. When going in swimming insert cotton, or, what is still better, a little wool in the ear. When out in a cold wind or snowstorm it is best to protect the ears. Avoid blowing the nose violently in case of cold. This sometimes causes the inflammation to spread into the Eustachian tube and causes deafness. Children's ears should never be boxed. A blow on the ear often drives the air with such force against the drumhead that it is ruptured by the shock.—Philad'a Record.

#### Cigarette Smoking.

The question of the harmfulness of cigarette smoking is continually coming to the front. Dr. H. F. Fiske, principal of the Northwestern Academy in Evanston, Ill., has recently stated that only two per cent of those addicted to cigarette smoking in the school has been able to reach the first grade, while in the lowest grade there was a percentage of such smokers of fifty-seven.

A mass of evidence has been brought against the cigarette as a most injurious factor in undermining the health, and especially of seriously affecting the nervous system of persons accustomed to smoking them to a large extent.

There can be no doubt that cigarette smoking is exceedingly harmful to the young, and probably smoking of any description in adolescence or adult age is calculated to be opposed to sustain mental effort.

That, however, cigarette smoking in itself is more harmful than are the other modes of using tobacco has never been proved; indeed, the experience of those who have made a study of the matter points to an opposite conclusion. The experiments made by the Health Department of Chicago, some five years ago, failed to reveal any of the peculiarly insidious and noxious properties in several brands of cigarettes examined, which it is often stated they possess, and the analysis undertaken in the laboratory of the London Lancet three years ago, of many brands, both American and English, reached similar results.

Smoking, when young, is harmful in many ways, and undoubtedly, as Dr. Fiske says, tends to weaken and deaden the mental faculties.

For this reason, therefore, cigarette smoking is to be condemned in the young, and not because the cigarette per se is especially injurious.

#### Sty.

The unsightly appearance, not less than the pain and discomfort of a sty, gives it its bad repute.

Two conditions, or perhaps more properly two phases of the same condition, of the eyelid are referred to as sty. The swelling due to an exudation of serum into the lid is perhaps more common than that in which the swelling progresses until pus is formed.

Swelling due to exudation readily occurs in the eyelid, both because of its loose, non-resistant texture, and also since its position is one much exposed to irritating atmospheric conditions.

Exposure to damp winds or cold not infrequently results in a swelling of the eyelid. This kind of sty often disappears of itself after a few hours of discomfort. Extract of witch hazel is a household remedy well suited to sty, especially at this stage. Its efficacy is heightened by binding a compress of linen, or better, of absorbent cotton, wet with the liquid, over the eye on going to bed and allowing it to remain.

Prolonged use of the eyes, as for example, reading many hours consecutively, or a like time devoted to fine needlework, may determine an attack of the sty. It is necessary in the light of our present knowledge of pus formation to attribute its occurrence here, as elsewhere, to an infection of germs from without. It is logical to suppose that the necessary infection may be conveyed by rubbing the lids with the fingers or with the doubled fist or

knuckles. The causes of sty which have been mentioned, overuse, for example, are apt to produce itching, while the delicate skin covering the lid is ill fitted to receive rude handling. A slight abrasion of tender cuticle covering the lid is doubtless the source of infection of many cases of sty in which an abscess is formed, although the pitted surface which dips inward to receive the eyelashes likewise forms a convenient point of entrance for the pus-producing germs.

Gentle bathing of the lids once or twice a day with a mildly stringent and antiseptic fluid, like witch hazel, plain or diluted, is an excellent measure for the prevention of sty in those whose occupations demand long-continued use of the eye, and who are prone to experience smarting, stinging and irritation of the lids. In some, properly fitted glasses constitute an effectual preventive of sty.

When once the swelling has gone on to pus formation, as evidenced by pointing or a yellowed surface, warm water compresses hasten the rupture of the boil with consequent relief of pain. More quickly effective is lancing of the boil by the physician.

It is not to be forgotten that underlying systemic causes are frequently predisposing factors in the production of sty. Such require appropriate tonics or the righting of sluggish conditions.—Youth's Companion.

#### How, When and Where to Rest.

Rest does not mean absolute inaction, but a change to mental occupation, if muscular work has been indulged in, and vice versa if mental work has been indulged in. We should endeavor to sleep eight hours out of twenty-four under the most favorable condition.

As to where:

In a comfortable bed on a firm hair mattress and pillows, or cotton mattress and pillows, as both answer the same hygienic purpose.

Among our books three hours a day if our work is muscular, or an out-of-door active life if mental, the same amount of time.

To some complete change of locality, to others a change of climate, and to still others of environment, and so on and so on.

As to when:

1. As nearly as possible one day in seven.

2. An annual vacation.

3. After excessive mental or physical exercise.

But always remember that too much work means waste, wreck, and too much rest means rust, death.—Health.

#### Profitable Home Handiwork.

In connection with women's exchanges, it is a noticeable fact that the best things always sell first, be the price high or low. But the workers who do things in the best way are very few and far between. Any woman who can make fine hand-made clothing for infants, and has enterprise enough to get it before the people, will turn away work from her doors. For white cotton embroidery, lettering on table and bed linen, scalloping, etc., there is always and everywhere a market. In large establishments the names of these workers are guarded as treasures, so precious are they. Rag dolls, the best, cannot be made fast enough to satisfy the demand. Inferior ones are a drug on the market. For bronze leather work, for needlebooks and work-boxes there is a steady demand, but the corners must be square, the stitching perfect, and the leather without a flaw.

No woman should attempt to sell embroidery who has not practiced for months all the necessary stitches on a sampler. It is wise for any woman who wishes to earn money in this way to experiment until she finds that she can do well, then keep at it until she is known by that one thing, and people instinctively think of her when they need that thing, when her success is assured; but she needs skill and infinite patience.

One woman last Christmas sold doz-

Not what is said of it, but  
what it does, has made  
the fame of the

## Elgin Watch

and made 10,000,000 Elgins necessary to the world's work. Sold by every jeweler in the land; guaranteed by the greatest watch works.

ELGIN NATIONAL WATCH CO.  
ELGIN, ILLINOIS.

ends of little cretonne bags for spoons and work, the little bags shaped like an English hold-all, but the colors were charmingly dainty, and the stitching and leather handle perfect. One woman has for years had a constant sale for a court-plaster case and pen-wiper, always exactly the same material and design, put up in lots of one dozen each, sent to every large city, and the demand has exceeded the supply. Linen cases for travellers, fine hemstitched towels, one kind of a scrap-basket in the daintiest of chintz, if perfect, will be sure to be successful.

Accuracy, taste and business methods are as necessary to a successful seller of pincushions as to a designer of villas, and any one who can design a pretty, stylish, useful pincushion, that is new, will make her fortune on the spot—or on the cushion.—Good House-keeping.

### DOMESTIC ECONOMY.

#### Hints to Housekeepers.

Before making a chicken salad, let the pieces before being cut stand in some chicken or white stock for a few hours. It will make it deliciously moist and tender. Roast or boiled chicken, or even a bit of canned chicken, can be treated in this way and improved.

Bacon cooked to perfection is bacon that has been sliced very thin and then chilled on the ice before going into the frying pan. Always have the frying pan smoking hot and put the bacon directly from the ice into the pan. Cook until clear and serve on a hot dish.

A recipe for good orange jelly is one ounce of gelatin, one pint of water, half a pound of loaf sugar, rind of two oranges and juice of eight, one lemon. Let it gradually come to a boil and boil for one minute. Strain it through muslin. A few drops of cochineal improves the color.

To breathe correctly, keep the chest up, out, forward, as if pulled up by a button. Keep the chin, the lips, the chest, on a line. Hold the shoulders on a line with the hips. The observance of these directions will insure to golf skirts and rainy-day costumes a real dignity and picturesque effect. Breathe upward and outward, as if about to fly, drawing in the air with slow, deep breaths and letting it out gently.

Stale bread that is broken and unsightly can be used for brewis, bread puddings or in scallops. Toast or steam all that can possibly be used in such a way. Remove crusts before toasting. It makes a dish more sightly, and the crusts can be dried for crumbs or worked into a dressing. Slices of bread too ragged to be toasted may be trimmed into diamonds, fingers, oblongs, rounds or triangles for canapes. Cut smaller pieces in dice, narrow strips or squares for croutons. Fry for forty seconds in hot fat, or butter lightly and brown in the oven. They are an attractive accompaniment for thick soups.

Hot milk is a most nutritious beverage—a real luxury, the value of which but few people know. Many who have abundance of milk never think of using

it as a drink, or rather as an eatable; for we should eat milk instead of drinking it—that is, take it in small sips. Why? Because the casein of milk, when it comes in contact with the acid of the gastric fluid, coagulates and forms curd; and, if swallowed in large quantities at once, a large curd is formed, which the stomach handles with difficulty. The gastric fluid can mingle much more readily with the small curds that result from sipping the milk.

#### Domestic Hints.

IRISH STEW.—Cut the lamb in dice. Cover with boiling water and cook slowly until tender. When about half cooked add one-half cup each of carrot and turnip, cut in small pieces, and one onion, sliced. Fifteen minutes before serving add potatoes cut fine. Thicken with flour. Season with salt and pepper and chopped celery.

FROGS' LEGS WITH MUSHROOMS.—Cut the legs at the thighs to divide them, wipe dry and fry in a little butter. Lift them from the pan and fry in it fresh mushrooms cut in halves. Take out the mushrooms, pour a little cream into the pan, thicken with an egg yolk or two, season with pepper and salt, pour over the legs and mushrooms which should be arranged on the same dish.

BOILED ONIONS AND HOLLANDAISE SAUCE.—Cook the onions till tender in salted water. Take up and pour over them a sauce made in this way: Cook together half a gill of vinegar and the same of water. Season with salt and white pepper, and when it is reduced about one-half set the dish containing it into a pan of hot water over the fire. Stir in slowly then the beaten yolks of five eggs; beat with a wire egg beater till smooth and creamy, then add, a small piece at a time, four ounces of fresh butter. Strain if it is not perfectly smooth, and pour over the onions.

DEVILLED CHICKEN.—Pick, singe and clean a plump young chicken. Wash thoroughly. Rub over it one teaspoonful of salt, dot thickly with small pieces of butter, and place in a hot oven breast side up. Baste frequently. Put the giblets in a saucepan with enough cold water to cover, one teaspoonful of salt and one small onion, boil until perfectly tender, and chop fine. As soon as the chicken is done remove it to a hot dish, skim the fat from the gravy, add one-half cup of hot water, and thicken. Turn the giblets into the gravy and cook a few moments; then pour over the chicken and serve. Garnish with parsley.

CHOCOLATE CUSTARD PUDDING.—Soften two ounces of chocolate over hot water, add two or three tablespoonfuls each of sugar and hot water, and let cook until glossy. Add to one quart of hot milk. Beat the yolks of six eggs and the whites of three, add the rest of a cup of sugar and a few grains of salt, and dilute with hot milk. Add two tablespoonfuls of butter and two teaspoonfuls of vanilla, and turn into a baking dish. Bake standing on a folded paper in a dish of hot water. Cover with a meringue made of the whites of three eggs and six tablespoonfuls of sugar. Return to the oven to color the meringue.



## S. F. Market Report.

### Produce Market.

SAN FRANCISCO, May 21, 1902

### CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July	Sept.
Wednesday.....	76% @ 75%	75% @ 73%
Thursday.....	75% @ 75%	74% @ 73%
Friday.....	75% @ 74%	74% @ 72%
Saturday.....	75% @ 74%	73% @ 72%
Monday.....	74% @ 74%	73 @ 73%
Tuesday.....	74% @ 75	73% @ 74%

### CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday.....	35% @ 34%	29% @ 29%
Thursday.....	35% @ 34%	29% @ 29%
Friday.....	34% @ 34%	29% @ 29%
Saturday.....	34% @ 34%	28% @ 29%
Monday.....	34 @ 34%	28% @ 29%
Tuesday.....	34% @ 35%	28% @ 29%

### SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	— @ —	1 12% @ 1 13%
Friday.....	1 15 @ 1 14%	1 14% @ 1 13%
Saturday.....	1 14% @ —	1 13% @ 1 13%
Monday.....	1 14% @ —	1 13% @ 1 13%
Tuesday.....	— @ —	1 13% @ 1 12%
Wednesday.....	1 13% @ —	1 12% @ 1 13%

### WHEAT.

More firmness was developed in the local wheat market, immediately following last review in these columns. Prospects are quite favorable for wheat values averaging higher during the coming season than they have during the season drawing to a close. Trading at present is very slow, owing to absence of noteworthy offerings, and this is likely to continue to be the case until new crop begins to come forward in wholesale quantity. Not much new wheat is apt to be on market before July, and seldom has arrived in great amount in June, although there have been initial receipts in May. The present season, however, is proving much later than the average for all products of the soil. Several wheat cargoes have been cleared the current week for Europe, but the aggregate for the month, according to present outlook, will be lighter than for any preceding month since August last, when only two wheat clearances were effected from this port for the entire month. The vessels now loading are drawing largely on the reserves at Port Costa. It is predicted that if stocks of California wheat are not practically exhausted before the new season opens, there will be less carried over in the tidewater warehouses than at corresponding date for many years past. In the chartering of ships for wheat loading there is very little doing. There is a fair supply of deep sea vessels and 27 shillings per ton is about current asking figures for carrying wheat to Europe, usual option as to port of discharge. One ship arrived under charter at 28 shilling and another at 27 shillings. One ship was taken for South Africa at 26s. 9d.

California Milling..... 1 16% @ 1 18%  
Cal. No. 1 shipping, alongside..... 1 13% @ 1 15  
Oregon Valley..... 1 13% @ 1 15  
Washington Blue Stem..... 1 15 @ 1 17%  
Washington Club..... 1 12% @ 1 15  
Off qualities wheat..... 1 10 @ 1 12%

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	6s1% @ 6s2d	6s5% @ 6s6d
Freight rates.....	35 @ 36% @ s	25 @ 27s
Local market.....	97% @ 1 00	1 13% @ 1 13%

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

### CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:  
May, 1902, delivery, \$1.15 @ 1.13;  
December, 1902, delivery, \$1.12 @ 1.13;  
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.12 @ 1.13; May, 1902, \$1.13.

### FLOUR.

The market shows a tolerably firm tone, in sympathy with the improvement lately established in wheat values. While spot stocks of flour are ample for immediate requirements, they have been decidedly heavier at corresponding dates of numerous seasons. Any changes in flour values in the near future are apt to be to stiffer figures.

Superfine, lower grades.....	22 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

### BARLEY.

Market for this cereal has continued unfavorable to the buying interest, with offerings of light volume and demand fairly active, but inquiry mainly for feed descriptions, both on local account and for shipment. Prospects are good for a moderately firm market for coming season's product. New No. 1 feed, July delivery, sold on Call Board up to 86c, and values for Dec. delivery touched 84c the current week, the highest point realized thus far this season for the options in question. Aside from the business in feed descriptions, there is nothing of consequence doing, brewing grades receiving at present no special attention.

Feed, No. 1 to choice.....	98% @ 1 00
Feed, fair to good.....	96% @ 97%
Brewing, No. 1 to choice.....	1 00 @ 1 02%
Chevalier, No. 1 to choice.....	1 10 @ 1 20
Chevalier, poor to fair.....	95 @ 1 05

### OATS.

There has been a decidedly strong market the past week, with increased demand, supposed to be largely on account of British government for shipment to South Africa. There are not many oats now coming forward. Spot stocks are of quite moderate proportions and are mostly in comparatively few hands.

White Oats, fancy feed.....	1 45 @ 1 47%
White, good to choice.....	1 40 @ 1 42%
White, poor to fair.....	1 32% @ 1 35
Gray, common to choice.....	1 32% @ 1 40
Milling.....	1 40 @ 1 45
Surprise, good to choice.....	1 45 @ 1 50
Black Russian.....	1 15 @ 1 30
Red.....	1 27% @ 1 42%

### CORN.

The market is ruling against buyers, with stocks of small volume, and supplies in this center are at present principally under the control of a few dealers. The demand at existing rates is naturally rather limited, as corn is now the dearest feed cereal on the list.

Large White, good to choice.....	1 50 @ 1 55
Large Yellow.....	1 47% @ 1 52%
Small Yellow.....	1 55 @ 1 60

### RYE.

Not much doing in this cereal and no special changes to note in prices. Offerings and demand are both of a light order.

Good to choice.....	92% @ 97%
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### BUCKWHEAT.

Practically nothing doing. Quotations for the time being are necessarily largely nominal.

Good to choice.....	1 55 @ 1 70
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### BEANS.

Present spot stocks and offerings are principally Large and Small Whites and Pinks, other kinds being as a rule in too limited supply to admit of any noteworthy wholesale operations. The tendency on Whites and Pinks has been to a little more steadiness. That values for these kinds will rule materially lower in the near future is not probable, and any special increase in the demand is almost certain to cause further hardening in prices. Limas are ruling firmer, with business here mainly of small jobbing proportions. Black-eyes are being stiffly held, under very limited supplies of this variety and holdings wholly in second hands.

Pea, fair to good, 100 lbs.....	3 25 @ 3 50
Small White, good to choice.....	2 40 @ 2 50
Lady Washington.....	2 40 @ 2 55
Pinks.....	2 10 @ 2 20
Bayos, good to choice.....	3 00 @ 3 10
Reds.....	2 25 @ 2 50
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	3 65 @ 3 75
Black-eye Beans.....	4 50 @ 4 75
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

### DRIED PEAS.

The market for both Green and Niles peas shows the same inactive condition previously noted. Values are quotably unchanged, but under selling pressure full current values could not be maintained.

Green Peas, California.....	1 50 @ 2 00
Niles Peas.....	1 75 @ 1 80

### WOOL.

Conditions in the local wool market remain much the same as previously noted. Trade is of light volume and at generally unchanged values. All desirable wools are being quite steadily held. Neither Eastern manufacturers nor dealers are doing any buying of consequence either here or elsewhere at present, making as an excuse therefor the recent labor strikes of woolen mill hands on the Atlantic side. No fears are entertained, however, about good to choice wools being very long neglected.

### SPRING.

Northern Cal., free.....	15 @ 16%
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13

Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	12 @ 15

### HOPS.

Little doing in the local market, nor is there apt to be much trading during the balance of the current season. There are no heavy quantities now offering from either first or second hands. Nominal wholesale values for good to choice hops of last crop may be stated to be 14 @ 16c, but the quality would have to be decidedly fine to command extreme figure above named from wholesale operators. New to arrive are in demand at 10 @ 12c, as to section and reputation of brand, and buyers are much more easily secured than sellers at the figures named. Recent advices from New York report the market there as follows: "While the movement has not been free enough to excite any special comment, there has been a little more buying interest and the market has shown increased firmness on nearly all classes of stock. The fact that stocks of State hops are nearly exhausted gives them an exceedingly strong position, especially so in view of numerous contracts for late spring and summer delivery. Up to 20c. has already been paid, and holders now ask more, but without sales of a quotable character. The under grades of State are equally strong and there is scarcely anything to be had below 18c. The business doing in Pacific Coast hops has been chiefly at 17 @ 19c., but a few lots are obtainable for less, and some time sales of choice to brewers have been effected at 19 @ 20c. Yearlings are nearly gone; there is call for them at somewhat better prices than heretofore quoted. Advices as to the condition of the growing crop are generally favorable. No information of a definite character from abroad. Of the imports this week 372 bales were returned Americans."

### HAY AND STRAW.

There is an easy tone to the hay market for other than most select, with more than enough offering of ordinary grades to accommodate the immediate demand. The inquiry on local account is never particularly active at this time of the year. The shipping trade is fair. One lot of about 4400 bales went forward to Mexico the past week per sailing vessel. In quotations there are no special changes to record. New crop volunteer hay is expected on market in quotable quantity at an early day. New Alfalfa arrived this week from Sacramento river section, but it was not in prime condition.

Wheat, good to choice.....	9 00 @ 12 00
Wheat and Oat.....	9 00 @ 11 50
Oat, good to choice.....	8 00 @ 10 50
Barley.....	7 50 @ 9 00
Alfalfa.....	8 00 @ 10 50
Clover.....	7 00 @ 8 50
Compressed.....	9 00 @ 11 50
Straw, 1/2 bale.....	40 @ 60

### MILLSTUFFS.

All kinds of mill offal continue in slim supply, not much arriving from any outside section. The demand is also quite limited. Asking prices are without material change, but market cannot be termed firm at full current figures. For Rolled Barley and Milled Corn stiff values are prevailing and not much of either sort offering.

Bran, 1/2 ton.....	17 50 @ 18 50
Middlings.....	19 00 @ 21 00
Shorts, Oregon.....	17 50 @ 19 00
Barley, Rolled.....	21 00 @ 22 00
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

### SEEDS.

Quotable values and the general tone of the market for the several kinds of seeds quoted herewith remain much the same as previously noted. Not much arriving or offering and business in the main is restricted to light jobbing operations. Prospects for coming Mustard crop are not at present very encouraging.

Flax.....	2 25 @ 2 50
Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 50 @ 2 65
Canary.....	3 1/4 @ 3 1/4
Rape.....	1 1/4 @ 2 1/4
Hemp.....	3 1/4 @ 3 1/4

### BAGS AND BAGGING.

The Grain Bag market is ruling steady, with holdings not particularly large as compared with probable requirements. Dealers are looking for an active demand in the next sixty days and are content not to press business at present. Business in Wool Sacks is about over for the season, and trading in Fruit Sacks has not yet begun.

Calcutta Grain Bags, buyer June-July.....	6% @ 6%
Calcutta Grain Bags, spot.....	6 @ 6%
San Francisco Grain Bags, 22x36, spot.....	6 @ 6%
San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	3a @ 3b
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	8 1/4 @ —
Gunnies.....	— @ —
Bean Bags.....	5 1/4 @ 5 1/2
Fruit Sacks, cotton, three sizes.....	5 1/2, 6, 6 1/2
Fruit Sacks, Jute.....	7 @ 7 1/4

### HIDES, PELTS AND TALLOW.

Hides showing good condition are in fair demand, both for shipment and on local account, and market is moderately firm at the quotations noted. Pelts are not very actively sought after, although in the quotable range of values for the same there are no changes to record. Desirable offerings of Tallow met as a rule with prompt custom, values ruling steady.

### HONEY.

Not much honey arriving or offering, neither is demand brisk. As prospects are that the new crop will not come up in quantity or quality to early estimates, the market is showing a generally firmer tone than has been lately experienced, although in quotable values there is no improvement to note.

Extracted, White Liquid.....	5 @ —
Extracted, Light Amber.....	4 1/4 @ —
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	10 @ 12 1/2
Amber Comb.....	7 @ 10
Dark Comb.....	6 @ 7

### BEEFWAX.

Demand is fair, both for shipment and on local account, and no trouble is experienced in securing custom within the range of values quoted.

Good to choice, light, 1/2 lb.....	27 @ 29
Dark.....	25 @ 26

### LIVE STOCK AND MEATS.

Beef has been selling at practically unchanged rates, the easier tone last noted still prevailing. Mutton was in ample receipt for immediate needs; quotations remained unchanged, but only for choice wethers did the market display any firmness. Good to choice Veal met with a tolerably firm market. Prices for Lamb were maintained at about same range as preceding week. Hogs sold closed to figures last quoted, but arrivals were slightly in excess of requirements for fresh meat, and packers were not inclined to pay extreme figures current.

Beef, first quality, dressed, net 1/2 lb.....	7 @ 7 1/4
Beef, second quality.....	7 @ —
Beef, third quality.....	6 1/2 @ —
Mutton—ewes, 8 @—c; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 125 to 200 lbs.....	6 @ 6 1/4
Hogs, small, fat.....	6 1/2 @ 6 1/2
Hogs, large, hard, over 200 lbs.....	6 1/2 @ 6 1/4
Hogs, soft or acorn fed.....	5 1/2 @ —
Hogs, country dressed.....	7 1/4 @ 8
Veal, small, 1/2 lb.....	8 @ 9 1/4
Veal, large, 1/2 lb.....	7 @ 8 1/4
Lamb, spring, 1/2 lb.....	9 1/4 @ 10

### POULTRY.

There have been no heavy arrivals of poultry the current week, either of California or Eastern, but the demand was not particularly brisk and the market could not be said to incline materially in favor of sellers. Extra choice stock was not neglected, and never is, such commanding above quotable rates. All poultry of good size and in prime condition sold to fair advantage. Common and poor old and small young fowls were not readily placed, even at low figures.

Turkeys, dressed, choice.....	— @ —
Turkeys, alive, Hens, 1/2 lb.....	14 @ 15
Turkeys, alive, Gobblers, 1/2 lb.....	13 @ 14
Hens, California, 1/2 dozen.....	4 00 @ 5 00
Roosters, old.....	4 25 @ 4 50
Roosters, young (full-grown).....	6 50 @ 8 00
Fryers.....	4 00 @ 5 00
Broilers, large.....	3 00 @ 4 00
Broilers, small to medium.....	1 50 @ 2 50
Ducks, old, 1/2 dozen.....	4 00 @ 5 00
Ducks, young, 1/2 dozen.....	4 50 @ 6 00
Geese, pair.....	1 25 @ 1 50
Goslings, pair.....	1 50 @ 1 75
Pigeons, old, 1/2 dozen.....	1 75 @ 2 00
Pigeons, young.....	1 50 @ 1 75

### BUTTER.

Market is ruling steady, current values being maintained largely through speculative buying against future needs. No

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marked changes in prices are looked for in the near future, but hot weather would have a decided tendency to advance values for best grades.

Creamery, extras, # lb.	20 @—
Creamery, firsts.	19 @—
Dairy, select.	19 @—
Dairy, firsts.	18 @—
Mixed store.	16 @17

## CHEESE.

Domestic product of recent make continues in fair supply, with demand not very brisk and market easy in tone. Old cheese is scarce and market for same is against buyers. Eastern markets are decidedly firm and lightly stocked.

California, fancy flat, new.	8½ @ 9½
California, good to choice old.	— @—
California, fair to good.	— @—
California, "Young Americas".	8½ @ 10

## EGGS.

Values in this market have not changed to any noteworthy degree since last review. Arrivals from all quarters continue to show more than ordinarily good average quality for this time of year, owing to prevailing cool weather. Eggs are still going into cold storage, but not in as heavy quantity as a few weeks ago. Eastern eggs of No. 1 quality are being offered in carload lots at 14½c. there, making them cost fully 18½c. here.

California, select, large, white and fresh.	17½ @ 18
California, select, irregular color & size.	16½ @ 17
California, good to choice store.	15½ @ 16½

## VEGETABLES.

During a portion of the week there was a glut of Green Peas, other than choice garden, and common field stock was almost unsalable, canners refusing them at any figure, taking only desirable garden grown or what are termed shot peas, the name indicating the size. The market the past few days has been in a little better shape, owing to reduced arrivals, but other than most desirable qualities were not readily placed. Old Onions other than Australian were practically out of stock. Australian were held at \$3.50@3.75 ex-store. New crop Onions were in fairly liberal receipt and were offered at reduced figures. String Beans were plentiful for this early date and market inclined in favor of buyers. Tomatoes continued in light stock and met with a firm market.

Asparagus, # box.	100 @ 25
Beans, String, # lb.	5 @ 7
Beans, Wax, # lb.	6 @ 8
Cabbage, choice garden, # 100 lbs.	50 @ —
Cucumbers, # doz.	40 @ 100
Egg Plant, # lb.	6 @ 8
Garlic, # lb.	— @ —
Onions, Yellow Danver, # cental.	— @ —
Onions, New Red, # cental.	50 @ 65
Peas, Sweet garden, # lb.	1½ @ 2
Peas, good to choice, # sack.	50 @ 100
Peppers, Green, # lb.	8 @ 12½
Rhubarb, # box.	40 @ 100
Summer Squash, # box.	75 @ 100
Tomatoes, # box.	150 @ 200

## POTATOES.

The market for old potatoes showed unsettled condition, as new are arriving rather freely and are being given the preference of most local buyers. Most of the inquiry for old Burbanks was for seed stock, buyers naming \$1.35@1.60 for fair to choice for seed purposes. For choice table Burbanks \$1.80 was about the utmost obtainable in a wholesale way. New potatoes of desirable quality sold up to \$2.50 per cental in a small way, good new bringing \$2 most of the time.

River Burbanks in sacks, # cental.	1 40 @ 1 65
Petaluma and Tomales Burbanks.	— @ —
Oregon Burbanks, table.	1 50 @ 1 80
Oregon Burbanks, seed.	1 35 @ 1 60
River Reds.	1 30 @ 1 50
New Potatoes.	1 85 @ 2 25
Sweets, Merced, # cental.	2 00 @ 2 25

## The Fruit Market.

## FRESH FRUITS.

More Apricots arrived from Arizona, but they did not move so readily or command as extreme figures as preceding week. For Royals \$3 per crate was a quotable extreme, some going at \$2.50, and Pringles had to be very desirable to readily command \$2.50 per crate, very fair being offered down to \$2. Blackberries put in an appearance Monday from Loomis, Placer county, but were not quotable over 15c per basket, not being ripe enough to be desirable. A few Raspberries from San Leandro went at 75c per basket. Gooseberries showed increased receipt, but such as were in prime to choice condition brought tolerably good figures. Strawberries were in liberal supply, with market weak, especially for other than most select. Cherries sold at a wide range, owing to great difference in quality of offerings. Choice were in fair request, but common qualities moved slowly at low prices. Cold storage Apples were held as last quoted, with movement slow.

Apples, # fancy, 4-tier box.	2 25 @ 2 50
Apples, good to choice, # 50-lb. box.	1 50 @ 2 00
Apples, common to fair, # 50-lb. box.	1 00 @ 1 25

Cherries, fair to choice, # box.	50 @ 1 00
Gooseberries, common, # drawer.	25 @ 35
Gooseberries, English, # lb.	6½ @ 7½
Strawberries, Longworth, # chest.	4 00 @ 8 00
Strawberries, Melinda, # chest.	3 00 @ 5 00
Strawberries, # crate.	50 @ 75

## DRIED FRUITS.

The condition of the market for evaporated and dried fruits remains much the same as at date of last review. There is a moderate jobbing trade which is steadily reducing supplies. A very healthy tone prevails, market being firm at practically unchanged values. Prices may show further hardening within the next thirty or sixty days, and would now be higher were it not for the fact that trade is mostly with coast points, very little going East at present. Some of the large Eastern dealers are still fairly stocked, and being desirous of cleaning up speedily, are unloading on outside districts which ordinarily draw supplies direct from this coast. These dealers may be compelled to enter this market before new crop becomes available, and if they have to lay in further supplies of 1901 product, they will likely find still stiffer prices than are now ruling. Remaining stocks of peaches are estimated at twelve to fifteen cars; of apricots, two to three cars; of pears, probably two cars; and of plums a still smaller quantity. As it will be fully thirty days before there will be new apricots worth mentioning, about sixty days before new peaches will put in an appearance, and a still longer time before pears and plums of coming crop will be ready for market, it is quite evident there is more than ample time to effect a clean-up of the different varieties named. Apples are now in such light stock as to admit of only a small jobbing trade, and apothecary prices are prevailing for this fruit. Last year's prunes are in very moderate stock and are ruling steady at last quoted range, but old prunes are still largely in evidence in this market and the East, and are meeting with slow sale at lower figures than are being realized for 1901 product. Not much doing in futures, the views of buyers being on a low plane. For new No. 1 Royal apricots dealers' ideas are 6½@6¾c in sacks, carload lots, July-August delivery. For this year's prunes, October delivery, dealers are taking 2½@2¾c for the four sizes, inside figure for Sonomas and outside figure for Santa Claras, but there is no evidence of growers doing any contracting at these prices. This year's crop of California prunes promises to be comparatively light and is more apt to be under than over 50,000 tons. An investigation of the damage to the prune crop about Vancouver, Washington, section has been made. It is found that in spots the prune crop is an entire failure while adjoining orchards are loaded. It is estimated that there will be about half a crop in the valley. It is now considered as certain that the Italian prunes in the vicinity of Corvallis, Oregon, have suffered on account of the late rains. The amount of the damage cannot be told at present. A good many trees seem to be still heavily laden with young fruit.

## EVAPORATED OR BLEACHED.

Apricots, Royal, choice, in sacks, # lb.	9 @ 10
Apricots, Moorpark.	10 @ 12
Apples, in 50-lb boxes, rings, pressed, fancy.	11 @ 11½
Apples, 50-lb boxes, rings, pressed, good to choice.	10 @ 10½
Nectarines, # lb.	5 @ 6
Peaches, unpeeled, choice.	6½ @ 7½
Peaches, peeled, in boxes.	12 @ 14
Plums, Red and Black, pitted.	5 @ 6
Plums, White and Yellow.	5 @ 6
Prunes, 4 sizes, in bags, —@—; 50-80s, 4½@4¾c; 80-70s, 4@4¼c; 70-80s, 3½@3¾c; 80-90s, 3@—; 90-100s, 2½@—; these figures for 1901 crop.	

## COMMON SUN-DRIED.

Apples, sliced.	6½ @ —
Apples, quartered.	6 @ —
Peaches, unpeeled.	6 @ 6½
Pears, prime halves.	5 @ 5½
Plums, unpitted, # lb.	1½ @ 2½

## RAISINS.

Market quiet but steady. Stocks are mainly 3 and 4-crown loose Muscatel and under control of the combine of seeders and packers.

Following are the prices for 1901 crop in carload lots:	
Loose Muscatels—	Per lb.
4-crown.	6½ @ —
3-crown.	5½ @ 6
2-crown.	— @ —
Seedless Sultanas.	— @ —
Thompson's Seedless, bleached.	— @ —
Seeded—	
1-lb. carton.	7½ @ 8
12-oz. carton.	6½ @ 6¾
London Layers, 20-lb. boxes—	
2-crown.	1 30 @ 1 40
3-crown.	1 40 @ 1 50

## CITRUS FRUITS.

Oranges are in light stock and in light request. Late Valencias are receiving fully as much if not more attention than Navels. Market for Lemons is slow at old figures. Limes are in good supply.

Oranges—Navels, # box.	1 50 @ 3 50
Mediterranean Sweet.	1 75 @ 2 25
Valencias, # box.	00 @ 3 50

Seedlings, # box.	1 00 @ 2 00
Tangerine, quarter box.	— @ —
Lemons—California, select, # box.	2 25 @ 2 50
California, good to choice.	1 50 @ 2 00
California, common to fair.	1 00 @ 1 50
Grape Fruit, # box.	75 @ 1 50
Limes—Mexican, # box.	4 00 @ 4 50

## NUTS.

Previously noted firmness prevails for both Almonds and Walnuts, with offerings very light. Business doing in Peanuts is at quatably unchanged values.

California Almonds, shelled.	16 @ 19
California Almonds, paper shell, # lb.	12 @ 13
California Almonds, soft shell.	9 @ 10
California Almonds, hard shell.	5 @ 6
Cal. White Walnuts, No. 1 soft shell.	12 @ 13
Cal. White Walnuts, No. 2 soft shell.	10 @ 11
Cal. White Walnuts, No. 1 hard shell.	10 @ 11
Cal. White Walnuts, No. 2 hard shell.	7 @ 8
Peanuts, California, fair to prime.	4½ @ 5½
Peanuts, Eastern, hand-picked.	5½ @ 6
Pine Nuts.	5 @ 6

## WINE.

The market is showing very quiet condition, and in the way of wholesale trading, or of transfers from first hands, there is practically nothing doing and nothing new to be said. Dry wines of last year's vintage remain quotable nominally at 20@25c per gallon wholesale. These figures are more in accord with the views of dealers than with asking prices of the majority of the growers who are still holding. To quote higher, however, would be misleading, as it would be impossible at this date to effect wholesale transfers in a regular way at a higher range. On the other hand, should dealers be compelled to go in search of wines, they would be unable to secure any great quantity without paying an advance on above figures.

## Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.	118,093	5,913,839
Wheat, centals.	120,105	9,470,970
Barley, centals.	35,718	6,070,473
Oats, centals.	4,965	774,706
Corn, centals.	6,414	120,916
Rye, centals.	2,120	270,131
Beans, sacks.	6,452	694,579
Potatoes, sacks.	17,899	1,304,499
Onions, sacks.	5,099	191,184
Hay, tons.	2,681	133,544
Wool, bales.	2,493	68,739
Hops, bales.	8	8,888

## EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.	39,268	4,003,566
Wheat, centals.	91,465	8,764,965
Barley, centals.	58	4,279,146
Oats, centals.	—	3,816
Corn, centals.	137	10,094
Beans, sacks.	13	23,637
Hay, bales.	4,381	19,334
Wool, pounds.	375,000	1,241,854
Hops, pounds.	49,920	552,207
Honey, cases.	—	6,090
Potatoes, pack's.	323	47,305

## California Dried Fruit at New York.

NEW YORK, May 21.—Evaporated apples, common, 7@9c; prime wire tray, 9½@9¾c; choice, 10@10½c; fancy, 10½@11c. California Dried Fruits.—Offerings of all kinds other than old Prunes are light, and market as a whole presents a firm tone. Prunes, 3½@6½c. Apricots, boxed, 10½@14c; bags, 10½@12c. Peaches, unpeeled, 8½@11c; peeled, 14@16c.

LIGHT ORANGE CROP.—Oroville Register: In examining the Seedling orange trees about town we find the crop will be lighter than usual. This is doubtless due to the very heavy crop borne last season, as the Seedling trees are apt to bear heavy one year and light the next. To insure a regular bearer, one must have budded orange trees.

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  - 608 acres, Nevada Co., adjoining No. 2, \$7,286.
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- All the above tracts are well wooded and watered; is a deep red soil suitable for fruit, and is in the thermal belt. R. R. station within 3 miles of each tract.
- 5 300 acres, Solano Co., Calif. \$9000. Fenced. Adjoins farming land. 3 miles from Sacramento river landing.
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This roofing is made of such materials as to resist the effects of heat, steam, gases, smoke, acids, alkalies and dampness; it will not scale, sun-crack, nor run in the intense heat of the sun—extreme cold does not injure it and snow will not remain on sloping roofs covered with P & B Ready Roofing.

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This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

## F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

## FOR SALE AT A SACRIFICE.

131 acres choice fruit land in one of the richest valleys of the State.  
80 acres in walnuts, olives, lemons, oranges and apricots in full bearing.  
Perpetual water right.  
Fine residence and outbuildings.  
Convenient to shipping point.  
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Address E. R. STEVENS, 844 Valencia St., San Francisco.

- \$2200 buys 65 acres choice sandy land, on railroad, 6 miles from Merced, Cal. Depot on land. Don't wait for your hat if you want a bargain.
  - \$1600 buys nicely improved 10-acre ranch with plenty of fruit and free water, only 4 miles from Merced.
  - 9-acre ranch, nicely improved, very rich land, only 1 mile from town. Price low for quick sale.
- Address E. M. MILLS, Merced, Cal.

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### Grain Census Figures Surprisingly Large.

The Federal census figures of 1900, relating to area and crop production in leading cereals, are much larger than anticipated, necessitating readjustment of accepted statements of output and movement, as sent out by the Department of Agriculture and by private crop-reporting bureaus. The official figures, says the Orange Judd Farmer, make area under corn in the census year 94,917,000 acres, yielding 2,666,000,000 bushels; wheat, 52,589,000 acres; total crop of the year, 658,534,000 bushels. Ten years earlier, in the crop year 1889, the census returns were 2,122,000,000 bushels corn and 468,374,000 bushels wheat. In corn, Illinois led in 1899 with more than 10,000,000 acres, followed by Iowa, Kansas, Missouri, Nebraska, in the order named. The remarkable increase given corn production in Texas is shown by returns of 5,015,000 acres, compared with 3,080,000 ten years earlier.

Minnesota sharply led in wheat acreage, the Dakotas following. The importance of this crop in Ohio is noted in an acreage exceeding 3,000,000 and in Pennsylvania 1,500,000 acres. In oats, Iowa led, Illinois close second, Wisconsin third. Pennsylvania and Wisconsin are leaders in rye. The barley area was placed at 4,471,000 acres, crop 119,633,000 bushels, California leading with nearly a quarter of the entire crop, followed by Minnesota, Iowa, Wisconsin, in order named. As long contended, the Department of Agriculture figures were much too low on barley, the Federal census returns being 4,500,000 acres in 1899, total yield of barley 119,600,000 bushels. Of the 807,000 acres under buckwheat, New York led with 290,000 acres and Pennsylvania 250,000.

Based on the census figures and the known record of crop movement, the per capita consumption of grain must be greater than hitherto believed. After accounting for the wheat and flour actually exported, and allowing for usual amount for seed, it is necessary to estimate a larger per capita consumption in order to make supply and distribution harmonize. The expansion in cereal production in past ten years is heavy, but so with the consumptive demands, which prevent burdensome excess, one season with another.



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Easily and thoroughly cured. New, common-sense method, not expensive. No cure, no pay. **F.R.E.** A practical, illustrated treatise on the absolute cure of Lump Jaw, free if you ask for Pamphlet No. 217. Fleming Bros., Chemists, Union Stock Yards, Chicago, Ill.

### Roadrunner vs. Rattlesnake.

The story that roadrunners would take the lives of rattlesnakes has been common in California since there were white men in this country. The story has usually been that the roadrunner would lay leaves about a sleeping snake and that as snakes would not crawl over sharp points thus kill him. But there have been very few authentic stories of the enmity between the bird and the reptile.

Now, however, an actual combat has been witnessed and reported by a responsible party. The combat was not one with leaves of cacti, but one of beak and fang. The roadrunner won out in this battle, but it was only after the snake had made a desperate struggle for his life.

Mr. Palmanteer, who is a High School boy, visited the Ogram place at Painted Cave rancho a day or so ago. While out in the hills he saw a roadrunner swooping repeatedly to a spot near by, and as he approached he heard, to his surprise, the piercing rattle of a snake. He took in the situation and settled down to watch one of the most interesting fights that ever took place in the world of the hills.

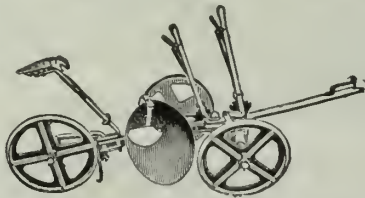
The rattler realized that he was attacked by a deadly enemy. He coiled and lay ready to strike as the bird approached him, and often did strike. But the roadrunner flew about him and, watching chance after chance, darted at the snake and drove its bill into the back of its head. The snake tried to keep its eyes upon its enemy during every moment of the combat. But at length the bird caught the rattler across the front of its head and with one sharp, incisive clutch took sight from both the snake's eyes.

Even after it was deprived of its sight the snake continued to fight aimlessly. It struck in all directions, evidently hearing or in some way scenting the enemy. At last, tired from its exertion, the rattler gave under in the fight and the roadrunner crushed the head of its victim until it was dead.

Palmanteer says that the fight was a vicious one on the part of the snake, but more playful on the part of the bird.

The strokes of the bill were sure and hard, and in the end the bird seemed to take a savage delight in its work and in the downfall of its enemy. Yet, despite the fatal result of the conflict, there was something of play in the attitude of the roadrunner. Palmanteer secured the rattles. The fight lasted half an hour.

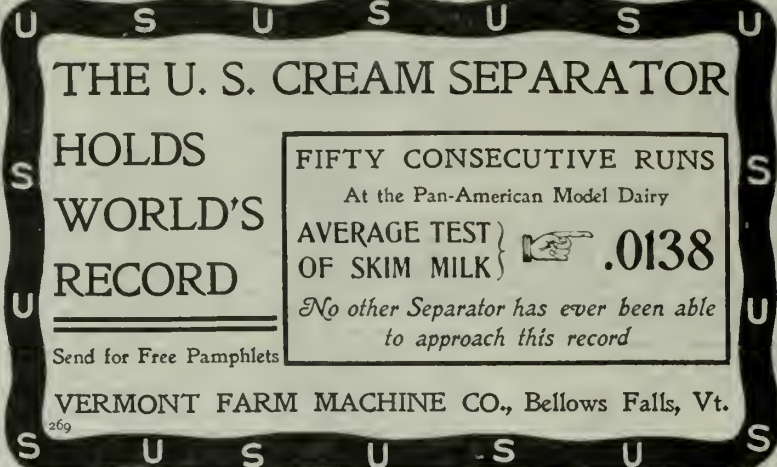
The record of this fight is of scientific value, as all such records are much sought by naturalists.—Santa Barbara News.



The new Benicia-Hancock disc plow put out during the past season proved to be an unqualified success. In view of past failures on the part of Eastern manufacturers, the Benicia Agricultural Works may feel proud of their product. More were sold than anticipated, for the public had begun to think that the disc did not make a good plow. It is safe to assert that no disc plow can be a success unless made under the Hancock patents, which have just been sustained in an injunction suit brought against an imitator. Baker & Hamilton have established agencies over the greater part of several States. Write them at San Francisco, Cal., for particulars.

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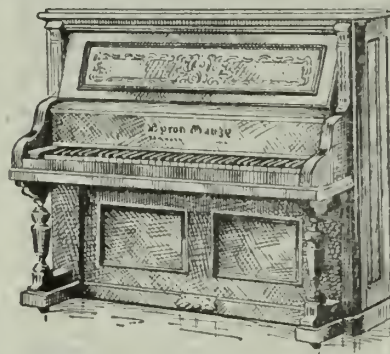
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### Flax Growing in Yolo County.

Al Hawkins, a farmer living at Buckeye, Yolo county, has demonstrated beyond a doubt the fact that there is more money in flax raising in Yolo county than there is in the production of grain of any kind. Mr. Hawkins, in a recent interview, gave the following facts and figures as printed in the Yolo Mail:

Last year he planted one acre of flax for an experiment and it yielded him fourteen sacks, for which he obtained 2 cents per pound. The sacks averaged 130 and 135 pounds, therefore he got between \$2.60 and \$2.70 per sack. The cost of production was no more than that of wheat raising, so any one can see the excess of profit over that of grain producing.

Mr. Hawkins was so well pleased with the result that he has made up his mind to engage in the business on a more extensive scale and he has now in thirty acres of winter-sown flax on his place at Buckeye. He has a contract to sell at the regular price of 2 cents per pound. The flax seed is used in making flaxseed oil and the market is steady and permanent.

Mr. Hawkins said that he could have more if he could have found any use for the straw, which he was compelled to waste. The straw, he said, makes fine feed for stock—in fact, he would rather have it than second grade hay. Another thing in its favor, said Mr. Hawkins, is that it gives better results on poor land than does any other kind of cereal. The land he planted this year is the poorest on his ranch, and he expects to get at least seven sacks per acre of it, which at the prices quoted will yield him \$18.55 per acre.

Every one who is engaged in the grain business must be familiar with the cost of producing grain, and, as the growing of flax is the same, it is not necessary to give any figures on that proposition. The flax is planted and cultivated in much the same manner as is grain and requires no more attention. Mr. Hawkins is so pleased with his experiences that he has decided, if he can make the necessary contract, to put in next year at least 300 acres of flax.

### Death of a Pioneer Sheep Breeder of California.

Jno. D. Patterson, says the American Sheep Breeder, died at his home in Geneva, New York, Friday, March 7, 1902. Mr. Patterson was over 86 years of age and practically the founder of the Rambouillet industry in this country. He began importing and breeding French Merinos in Chautauqua county, New York, away back in the forties and finally removed his breeding stud to California, where he purchased a large tract of land and continued importing and breeding there from about 1851, keeping up his importations and breeding operations on a large scale for the succeeding twelve or fifteen years. From these early importations were founded the famous Blaco, Roberts, Glide, Garnier, Grimaud and other great flocks that have since become famous on the Pacific coast and throughout the country. Mr. Patterson's name will always be honorably associated with the history of the Rambouillet breed in this country. Though beginning his importations of French Merinos considerably more than half a century ago, he lived to see his favorite breed established and made popular in all parts of the country. He was a man of

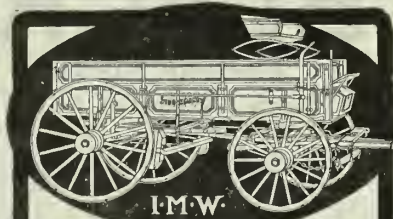
clear vision, remarkable forecast, unusually fine executive ability, boundless enterprise, high courage, unquestioned honor and of most generous and kindly disposition. Mr. Patterson married late in life. Mrs. Patterson survives him, but we believe he left no children.

### Just One Tree.

There were some full-grown logs at the mill recently—that is, if logs 14, 15 and 16 feet in diameter are full grown. There were eleven of them, all from the same tree, and they ranged from 16 to 20 feet in length. When they were rafted down the river it looked as though a small town was afloat, or a fleet of vessels. They stood as high as a man's head out of water. The most of them were blasted open with powder or split with wedges before they could be sawed. Two of them had to be blasted in two before the railroad could carry them.

The eleven logs from the same tree scaled over 65,000 feet in the woods. According to the usual custom, the contractor received pay for three-fourths of this amount for logging. This means that for cutting the tree and getting it into the river he received nearly \$250—a huge price for logging one tree. Had the tree been obtained from some other person's land besides that of the company the owner would have received about \$50 for it, according to the ruling price, without even looking at it.

It was a particularly sound tree and made an excellent quality of lumber. It tallied 51,375 feet, and at the San Francisco retail price it would be worth over \$2000—a good price for the product of a single tree. Still, that is some lumber, and on the other hand there is some expense in turning it into lumber. Had the mill been running but one side, the sawing of that one tree would have been an average day's work.—Mendocino Beacon.



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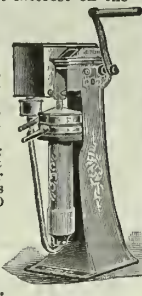
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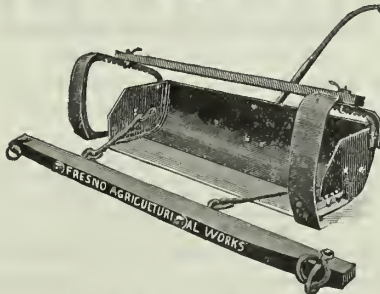
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### Tulare Grange.

TO THE EDITOR:—Tulare Grange held its regular session on the 17th. Two candidates were reported on favorably and were duly elected. After the transaction of the routine business and after participating in an excellent lunch and the enjoyment of the social intercourse which the lunch always promotes, the Grange resumed its session and the subject for consideration for the day was taken up: "That the present tendency of the United States towards centralization of government should be resisted."

The discussion of this subject was strictly one-sided. To start with the question was asked who, of all present, knew of any tendency of the United States Government towards centralization. All and severally denied any knowledge of such tendency, or of any acts of the Government which any fair-minded person could construe as a tendency to centralization of government, on the contrary it was claimed and admitted by all that the executive department of our Government, from the great Washington to our patriotic and efficient Roosevelt, were all in their acts imbued by a strong sense of the duties and responsibilities of their office by a great love of our republican form of government and of our Constitution, and by an abiding determination that every act of theirs should be within the powers conferred on them by the Constitution and the duties incumbent on them, to preserve to its fullest extent our republican form of government.

It was suggested that the acts of the judiciary by its writ of prohibition may have given room for a change of assumption of power not conferred on it by the Constitution, but it was freely admitted that at no time has the judiciary used its power until lawlessness threatened the property and peace of the community, and at times a common sense construction of the powers and duties of the judiciary contemplated by the Constitution of the United States required such writs of prohibition should issue and such writs of prohibition were for the good of the parties prohibited from further lawlessness as well as to the peace and preservation of property, law and order. The nation is to be congratulated that at the times such writs of prohibition issued we had an Executive that promptly and efficiently enforced them.

As to the legislative department of our Government, it is just what the people make it. That all of its acts have not all the time been in the best interests of the people goes without saying, but that does not make the rule, for such mistaken acts only expressed the mistaken views of the people they represented, and in every such instance of mistaken legislation the people soon realized the mistake made and promptly elected representatives with a better knowledge of legislation the good of the people required and a true patriotic sense of their own duties to enact.

Tulare Grange knows of no tendency of the Government of the United States towards centralization, it has full confidence in each and all departments of our Government; it hopes for the continued efficient administration of each department in the future as it has been in the past; it has every confidence such will be the case.

The following questions were drawn from the question box: First—Should any except those actively engaged in farming be elected members of our Order? Second—What work on the farm should women do? Third—What is the difference in nutritive value between pie-melon, pumpkins and squash?

Sister Ellsworth asked what causes artesian wells to flow after they have once ceased flowing?

The next meeting day, June 7th, will be children's day. On June 21st the Grange will discuss, "Do farmers need a special education? and that strikes are productive of more harm than good to the working classes." J. T.

### Oakland Grange.

TO THE EDITOR: Oakland Grange held one of its enjoyable installations and feasts Saturday, May 7th. The fourth degree was conferred on a class at 11 o'clock and at 12:30 a fine lunch was served by the ladies, after which the following programme was ably rendered: Vocal duet, Mrs. Christensen and Mr. Moore; recitation, Mrs. Ella Dow; vocal solo, Mr. Sanford; recitation, Mrs. Grant Miller; piano duet, Miss Bacon and Miss Dewey; reading of an original poem, Mrs. S. J. Cross; piano solo, Mrs. Brown; humorous reading, Mrs. C. W. Emery. There were visiting patrons present from Hayward, Watsonville and New Hampshire. NITA.

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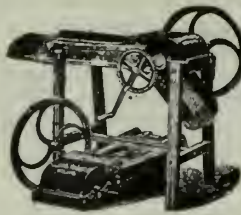
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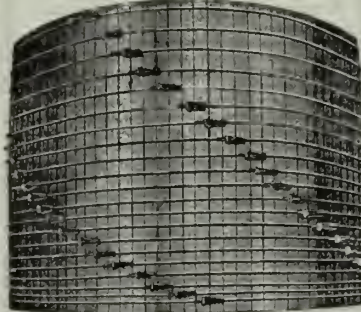
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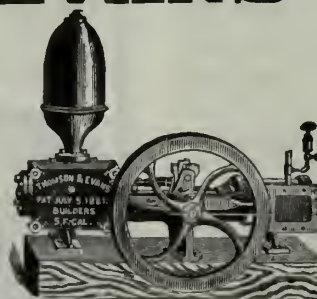
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## THE VETERINARIAN.

Answers by Dr. C. W. Fisher.

TO THE EDITOR:—Last week I lost a valuable Jersey cow and do not know what the disease was that killed her, and now another is sick with the same symptoms, which are as follows: First, a wild, staring look out of the eyes, then loss of milk until the flow ceased altogether. She does not chew her cud and is rather constipated at first, as there were no droppings in the barn through the night. The paunch seems to be distended; she has high fever and severe chills, and trembling all over. There is a bloody discharge from the nose. Her horns and ears are cold. Breathing is slow and labored. She has a great desire to lick salt, and at times unquenchable thirst. She has no appetite at all; will not touch food. The body is large and appears to be bloated, but not. Moving of feet as if in great pain. When lying down she turns her head to the side. The cow that died was fresh in February of this year, the other's calf is but a week old. The range has been in the mountains mostly.—J. BURNSIDE, Manzanita.

It is impossible from your letter to state what disease is effecting your cows. I would suspect indigestion, resulting from eating poisonous weeds, and would advise you to call some good veterinarian from Los Angeles. Dr. W. J. Oliver and Dr. R. Whittlesey are both known to be good; there are also others. Further information would be appreciated, as we are working for mutual benefit.

## HARDLY WORTH MEDICINE.

TO THE EDITOR:—I have a hog that has been sick about two months. It seemed all right one morning when I turned it out in pasture; in the evening it could hardly walk. It seemed to be weak in its back and could hardly stand up behind. The hog is very thin now, and when it stands up its toes turn up just like some hogs that are very heavy. I think it is kidney trouble. What is the best treatment for it?—SUBSCRIBER, Kelseyville.

There is very little use of attempting treatment of a hog sick so long. Allow him to run in a pasture with good feed. The price of drugs had better be invested in another hog.

CARL W. FISHER, V. S., D. V. M.  
San Mateo.

## Stable Disinfection.

By A. W. BITTING, Veterinarian of the Purdue Agricultural Experiment Station.

The disinfection of stables after a period of constant use should be a part of routine practice. Dairy stables in particular should be disinfected twice a year and oftener if the conditions demand it. It is not possible to give many stables that thorough disinfection that is possible in houses, because their construction will not admit of it, but it is possible to do very much and at little expense.

The ideal method of disinfection is by means of a gas, as that would have the power to penetrate everywhere. The effectiveness of this method depends upon securing a large volume of gas and maintaining it for some time. Unless the stable can be made tight a gas will be of little use. For all practical purposes the gas produced by burning sulphur over a pot of coals is the best if used in connection with steam. The dry sulphur fumes have little germ killing power, but when combined with the steam in the air it forms a compound that is deadly. The boiling of water and burning of sulphur should go together. Formaldehyde gas is not so efficient for stable disinfection as many would have us believe. A very practical

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven catarrh to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O.

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cal means of disinfection that may be used under almost every stable condition is by whitewashing. This is not expensive for material and is very easily applied by means of an inexpensive fruit spray pump. The lime should be very thoroughly slacked and strained through cloth and made just thin enough to work well through the nozzle. One man can apply two coats of whitewash with a pump and reach all parts of side and ceiling of a room in about one-fourth the time required with the brush. Whitewash will kill or hold the germs with which it comes in contact. It has the effect, too, of making the barn lighter and cleaner. After the first spraying one application will usually be sufficient if given regularly. As the business of supplying milk to cities and creameries is of large proportions and depends upon cleanliness, this precaution of disinfection should be regularly followed.

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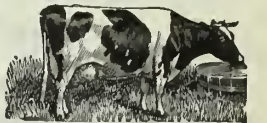
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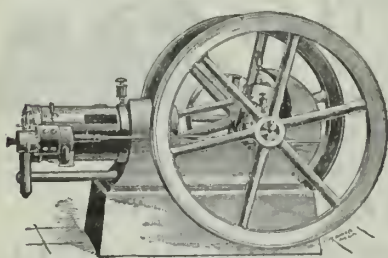
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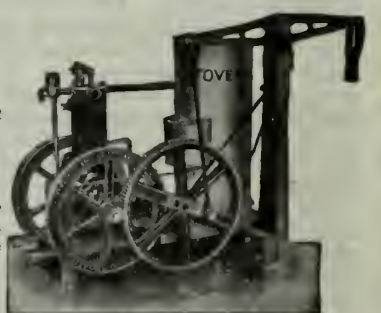
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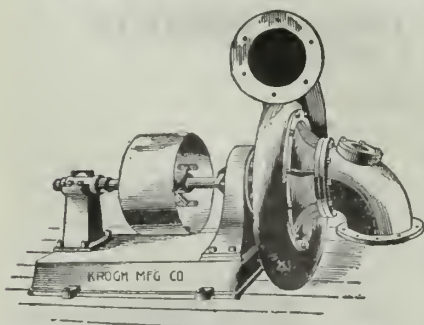
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# THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 22.

SAN FRANCISCO, SATURDAY, MAY 31, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

## Along the Southern Coast.

Perhaps in our weakness for the vast products which are being secured from the fat, deep lands of the great interior valley we are apt to overlook the charms and resources of the coast region. To do this would be a serious error, for the progress of the coast slopes and valleys is notable and is contributing much to the symmetrical development of the State. Let the beautiful pictures on this page remind the reader of this fact.

The greatest recent event contributing to the proper recognition of the desirability of coast lands and climates and to the opportunities for new development in coast towns is the completion of the shore line of the Southern Pacific Railway from San Francisco to Los Angeles. It is true that this splendid enterprise has been long in progress, and, as it proceeded in successive installments, it has ministered to the advancement of the Santa Clara, Pajaro and Salinas valleys and their tributaries, also to the rich region which it traversed in southern San Luis Obispo and northern Santa Barbara counties. But when the line was opened through, and overland travel began going that way, a new impulse to development was imparted to all



Mountain-Walled, Oak Dotted Parks of the Coast Region South of San Francisco.

these northern districts, as well as to the rich coast flats and hillsides east and south of Point Conception to which overland trains brought new contact with the world at large. The whole region is one of rich and productive valleys bordered by extensive sweeps

of upland rising to lofty mountain slopes and crests. The range of products from the vast output of field vegetables on the lower lands to the fruits of the mesas and the pasturage products of the ranges above or beyond them, is varied and wealth-winning.

The places for homes are so different in elevation and exposure that one can have everything from frostless thermal vale or hot plain, where clothing is a burden, to the ocean bluffs and beaches where low temperatures from the restless ocean impel the vigorous system to constant and tireless effort. This whole region of hundreds of miles is now convenient of access.

The pictures on this page show two leading features of the district—first the oak-parked slopes which are to be found almost everywhere and second the wave-washed shore, along which one can ride for hours soothed by the droning of the sea and the tempered warmth of the unbroken sunshine.



One of the Many Stretches of Sandy Beaches Along the Southern Coast of California.



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DEWEY PUBLISHING CO. Publishers

E. J. WICKSON. Horticultural Editor

San Francisco, May 31, 1902.

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## The Week.

The multiplication of fruits and vegetables is a reminder of the advance of the season. Soon the harvest will be in full swing. The apprehension of lack of labor supply is widespread and localities are bidding against each other for the favor of workers. The Farmers' and Dairyman's Union of Hanford is doing a good thing for its labor supply, and advertising the resources of the region as well, by circulating widely a small handbill or dodger to the effect that hundreds of people will be needed in the rapidly approaching fruit harvest, and can have several weeks' pleasant and profitable labor. This is a good idea; it will call attention in a definite way to the opportunity, and the sight of the offer may suggest to many the feasibility of making a summer in the country profitable. If our fruit growers will do more of this, we believe they will get much help from the towns.

Wheat is a little easier for shipping, while milling is a little firmer. Two cargoes have gone out, one to South Africa, another to Europe, and most of 13,000 barrels of flour goes to New Zealand. We are feeding the Southern Hemisphere all right this week. Feed barley is a little easier; Call Board May barley amounting to about 3500 tons is to be unloaded and buyers are wary. On the other hand, brewing barley is looking better. Oats are rather firm and in fair demand, though not active. Corn is held as before; it is too high for consuming demand. Bran and other millstuffs are firm. Hay is barely steady, except for choice wheat. Meats are unchanged and rather quiet. Butter is firm and in good demand. New cheese is quiet and old cheese is scarce. Eggs are slightly firmer for uniformly large and fresh, while lower grades are a little slow. Poultry is moderately firm for all good stock and the demand is good at old prices. Belgian hares are in fair demand if of large size. Potatoes are irregular; a heavy receipt of Vancouver potatoes broke the market, and it has not yet recovered, though receipts have decreased. Onions are unchanged; only reds are in though a few immature whites are appearing. Asparagus, string beans, etc., are increasing in supply and selling well. Oranges, if choice, are bringing good prices in a moderate way. Choice lemons are looking up, though low grades are no better; limes are cheap. Cherries and berries, including Logans, are increasing in volume and selling low in quantity. Figs and apricots from Arizona sell well in a small way. Dried fruits are quiet; a carload of dried apples from the East is something California should not allow. Reports of advance sales of nuts are rife;

10½c is reported bid and 11c asked for almonds. Some new honey is arriving and the market is quiet. Wool is dull; country purchases are said to be dragging in the city at present.

Our fruit growers should make the fullest possible use of the services of Alexander Craw, entomologist of the State Board of Horticulturist, who undertakes as part of his duties the breeding and distribution of parasites for the reduction of some of our most grievous scale pests. We have often advised our readers to apply for these beneficial insects and give them full trial. For example, those who have the "brown apricot scale" on their apricot, peach and prune trees should know that Mr. Craw will have colonies of the internal parasitic flies (*Comys fusca*) for distribution about the second week in June. If the orchardists will send Mr. Craw, Clay street dock, San Francisco, samples by mail of the scales they find he will better understand what insects to send them. It takes this parasite two years to become thoroughly established in an infested orchard. The scales that are parasitized are dark colored when full grown and have no eggs under them. The second year 98% of the scales usually contain parasites. Mr. Craw would also like to have samples of scales for examination from orchards where the *Comys fusca* were placed one and two years ago. It will be good for the growers to keep close to Mr. Craw and his beneficent breeding establishment.

The advancement which California is making in horticultural arts away from fruit lines is shown by two facts which correspondents bring to our attention this week. One is the determination of one of the best known Eastern plantmen, Mr. J. Lewis Childs, to secure for himself a California establishment where much of his propagation of seeds and bulbs shall be done. He has naturally chosen the region which has been the scene of Burbank's great conquests, the Santa Rosa valley. Just where he will locate is not known, but his decision was reached in April, and he will come again this summer for the purchase and installation. He believes for his purposes there is nothing better than Sonoma county. Another significant fact is the expansion and better equipment of the Morse seed farm near Gilroy. A new warehouse supplied with the best steam machinery for seed manipulation and a green house for seed testing are among the improvements. California has no rival in the production of seeds and some classes of bulbs, and the extension of these interests is rapidly proceeding.

The information given on another page about the live stock displays at the California State Fair next September should receive the careful attention of all interested in those lines. The educational value of having such an expert as Prof. Carlyle pass upon our local animals can hardly be overestimated. He can be trusted to bring to us up-to-date standards from that part of the country where perhaps higher ideals prevail than elsewhere, and where such ideals have been most nearly approached. To have a premium at his hand will be a distinguished honor; but more valuable still it will be to actually know by sight what is the accepted type, and this advantage can be shared by all who will go to the Fair and watch closely the judging as it proceeds. One of our oldest swine breeders said to us the other day: "I believe I am a good judge of swine, but I want to see just how my judgment stands as compared with that of the best Eastern experts, who have reduced judging to a science." Prof. Carlyle's engagement should not only bring out a large display, but it should be used to its fullest advantage by hundreds of earnest people who want to be just right in their views.

The Indio people are perfecting to give their submarine muskmelons the greatest advantages of cool rapid transit to Eastern consumers. The Southern Pacific has promised the Coachilla Producers' Association that a daily service of refrigerator cars, to run East on passenger train schedule time, will be provided for transportation of melons in the Coachilla valley. It is expected that the shipments this year will amount to 250 to 300 carloads. It is claimed that in the Coachilla valley melons as sweet and as well formed as the Rocky Ford kind are grown, and this year there are between 700 and 800 acres of melons to harvest.

## The California Polytechnic School.

This new institution, which is to be devoted to practical instruction in rural arts and industries, as described in the PACIFIC RURAL PRESS of February 8, 1902, is now rapidly developing. At a meeting held in this city on Monday there were present Trustees S. C. Smith, Bakersfield; F. A. Hihn, Santa Cruz; T. J. Kirk, Sacramento; W. M. John, San Luis Obispo; E. J. Wickson, Berkeley. Trustee Hihn of the special committee on the selection of a site presented a deed duly executed by Dawson Lowe, San Luis Obispo, for about 280 acres of land for a consideration of \$7709.30. Upon this tract of land, situated about a mile north of the city of San Luis Obispo, the school is to be established. The selection of a principal for the school was taken up. Trustee Wickson proposed the following outline of the duties of the principal, which was unanimously adopted:

Resolved, That the management of the institution, in accordance with rules and policies approved by the Board of Trustees, shall be vested in a principal officer whose title shall be "Director of the California Polytechnic School," to hold office during the pleasure of the Board. It shall be the duty of said director to maintain discipline, to supervise instruction and to participate therein so far as found practicable, to keep accurate accounts of receipts and expenditures and conduct the business of the school in accordance with the methods prescribed by the Board; to examine into the qualifications, characters and suitability of applicants for election as instructors and other employees of the Board; to nominate persons for election to the various positions created by the Board, to temporarily suspend and immediately report to the Board any incumbent of such position who is guilty of gross dereliction of duty or willful insubordination; to submit to the Board at each regular meeting a detailed report on the operations of the institution and to make recommendations for its future operation—in short, to do everything within his power for the promotion of the work and interests of the school.

Trustee Kirk nominated as director, Mr. Leroy Anderson of the State University, his engagement to date from June 1, 1902. Mr. Anderson was unanimously elected. Mr. Anderson is at present Instructor in Dairy Husbandry, University of California. He is 35 years of age. His early life was spent on a farm at Magee, Seneca county, New York. After preparatory work at local schools and academies Mr. Anderson taught school and then entered Cornell University. He graduated from the scientific course at Cornell in 1896, after specializing in agriculture. During 1896-97 he was a fellow in agriculture. In the spring of 1897 he was appointed assistant in dairy husbandry and placed in entire charge of the work of that department during the absence of its head, Professor H. H. Wing, in Europe. From 1898 until he came to the University of California Mr. Anderson was engaged in the agricultural extension work provided for by a special appropriation of the New York Legislature. His duties were varied. Part of his time was spent in conducting experimental work at dairy farms and butter or cheese factories; part in carrying on experiments in animal and dairy husbandry and giving instruction to classes of dairy students. Besides his studies at Cornell he has done special work in animal husbandry at the University of Wisconsin under Professors Henry and Carlyle, and has studied the methods of the agricultural colleges of Iowa and Michigan.

Director Anderson was selected by President Wheeler to fill a new position of Instructor of Dairy Husbandry, which was created at the State University in 1900. He proceeded energetically with the development of dairy instruction at the University, organized and conducted the Dairy School of 1901, which was conspicuously successful, students appearing in greater numbers than could be accommodated. He has travelled widely throughout the State in connection with Farmers' Institutes and dairy investigation work, and is thoroughly acquainted with the local conditions and popular among those engaged in developing the various lines of animal industry in California. He seemed in every way qualified by experience, by temperament, mental endowment and energy to proceed satisfactorily toward the development of this new school of rural industry. Director Anderson will go at once to the Eastern States to examine similar institutions.



## QUERIES AND REPLIES.

### Diseases of the Walnut.

TO THE EDITOR:—Will the bacterial blight of the walnut attack any part of the tree but the nut? Does it work on old trees as well as nursery stock? What is the best way of keeping the disease out of the orchard, or, if already there, of eradicating it? What about the root knots on the walnut which you mentioned in the PACIFIC RURAL PRESS of May 10th; is this disease confined to nursery trees and is there anything to do but to take out the affected tree?—READER, Rivera, Los Angeles county.

The bacterial blight attacks the leaves and the young wood as well as the nut, and is unquestionably able to be carried here and there by various agencies. It does attack old trees. There is no satisfactory method of eradicating or combating the disease. The presence of the Bordeaux mixture would undoubtedly act to a certain extent as a preventive, because the germs brought in any way into the presence of this mixture of lime and copper would be destroyed, but, so far as known, it cannot be claimed for the Bordeaux mixture that it is perfect protection, but that the disease affecting the internal tissues may get entrance to the tree in spite of the protecting application. We learn from last week's Anaheim Gazette that Prof. Newton B. Pierce of Santa Ana, who has given much attention to this disease, is making some extensive experiments in the orchards of A. W. Worms and Mr. Lovering, near Anaheim, where he is spraying with three different solutions. He has been making these investigations for some time and now gives hope for the ultimate decrease of the disease, if not an entire cure. He says that with the present knowledge of the disease and sprays with which to curb its growth, he can save considerable of the crop that has heretofore been lost.

There are two kinds of root knot affecting the English walnut in California. One is caused by the Nemetode worms and is symmetrically developed around the smaller rootlets in oval form, the rootlets running through the center. The other form is caused by a fungus and is usually developed on one side of a root, small or large, forming a sort of swelling or excrescence. There is no remedy for the first form, because the Nemetode worms may be scattered all through the mass of the soil and out of reach of any treatment. The treatment for the root knot is removal with hatchet or chisel and sterilization of the wound with the Bordeaux mixture. Fortunately, both these troubles are thus far quite rare, and if trees are planted free of the trouble it may be a very long period before they will be attacked, if ever. Of course, to administer to this safety, one ought to be very careful in selecting healthy trees for a new planting, or else the whole plantation may be in danger.

### Destruction of Friendly Insects.

TO THE EDITOR:—The worm I send you inclosed is the kind that is destroying my tomatoes and Hubbard squashes. As soon as the tomato vine is bored it wilts and dies. I am picking them off every day, and cut off the wilted limbs. (1) What strength can I use arsenious acid so the solution will not injure my vines? (2) Do the common ladybugs do harm to vines?—GROWER, Tulare county.

The only insect we could find in the box which you send was a small worm-like animal, black with yellow markings, rather rough or spiny. Is that the insect which you think is injuring your tomato vines? If it really is so, it is very different from the usual habit of this insect, because the so-called "worm" which you send is the larva of a ladybug and its usual occupation in life is to devour as many plant lice as possible. For this reason this insect is highly beneficial as a rule, and if your impression of it is otherwise it ought to be verified by further observation. Both this insect and its present form, the common ladybugs of which you speak, are beneficial and their abundant presence means the destruction of a great many injurious insects.

The wilting and dying of tomato and squash vines is usually not due to insects, although the insects may carry the trouble from one vine to another. It is a blight caused by bacteria working in the inner tissues of the plant and there is no way of reaching it by outward application. The best thing to do is to remove the plants or parts of plants which wilt and destroy them. If you look closely you may see on the under

side of the leaves of some of these plants large numbers of plant lice or aphides. If that is so, it will account for the abundance of the ladybugs.

### Black Scale on Shrubbery.

TO THE EDITOR:—The scale of which I send sample has infected many of the bushes and trees in my garden. It first appeared upon a peach tree, which it literally covered, and from which it has spread all over the garden. Can you inform me of some remedy for it?—SUBSCRIBER, San Francisco.

The twig which you sent is badly infested with the black scale (*Lecanium oleæ*). This is one of the worst scales we have to do with, not only because of its rapid multiplication, but because it is difficult to destroy. It is not much affected by the winter spraying, which is successful with many other scales. Dig up and burn all badly infested plants which you do not particularly care for; then scrub off as well as possible with soap and stiff brush all parts of the plants which you wish to retain that can be readily reached in this way, cutting back climbers and other tall plants as much as can be done without injury to them. Then you will have to begin a systematic course of spraying of the plants that remain. It is too early now for this, because the old scales which you sent are filled with unhatched eggs. If you should begin about the first of July spraying thoroughly with the kerosene emulsion, and repeat this about August 1st and about September 1st, you will succeed in very largely reducing these scales. This kerosene emulsion, if properly made, is quite destructive to insects and is not injurious to plants, but you have to be careful that the ingredients are churned together for a sufficient length of time until the emulsion appears something in the form of thickened milk. It can then be diluted with ten or fifteen times its bulk of water and the oil will not separate. You have a very difficult proposition on hand, and nothing but thorough and persistent work will accomplish the results which you desire.

### Watermelon Aphis.

TO THE EDITOR:—I send a diseased watermelon vine. I think it is aphis. Is whale oil soap the right spray—one pound to four gallons of water? The kerosene emulsion seems to injure the vine. Probably this should be diluted more than the receipt calls for.—GEORGE V. BECKMAN, Lodi.

The insects which you send are the aphis, and whale oil soap (one pound to four gallons of water) would be a good wash for them. The kerosene emulsion is usually preferred because it is cheaper and, on the whole, more effective. Perhaps you used it too strong, or perhaps you did not churn it long enough to get the true emulsion. If we had many vines to spray, we should try the kerosene emulsion again, being sure that it was thoroughly emulsified, and then using about 50% more water in diluting it—say, one gallon of emulsion to fifteen gallons of water. This ought to be very destructive to the insect and not injurious to the plant.

### For Gummosis of the Lemon.

TO THE EDITOR:—For gummosis of the lemon is the carbolic acid sprayed on the diseased part only or over all the tree? The trees are now in bloom.—GROWER, Fresno county.

Gummosis on the lemon can be treated by cleaning away thoroughly the gum and diseased bark and applying carbolic acid to the wound alone and not to the healthy bark. This is best done with a swab or brush and should not be sprayed on, because it is not desirable to reach the healthy parts of the plants.

### Dwarf Apples.

TO THE EDITOR:—Has the growing of dwarf apple trees ever been tried successfully in this State? Would they grow if planted between a ten-year-old prune orchard?—F. L. W. MACDONALD, Santa Cruz county.

There were a few dwarf apples grown in the fruit gardens which were planted in California in early days, but so far as we know none survive. Some pear trees on quince stock planted in the same era may still be seen. The dwarf apple is unsuited to anything but garden policy, and so far as we can see has no place in commercial orcharding. We have always thought something very satisfactory could be done with them by amateurs on their home places, but we are not aware that it has been done in Cali-

fornia. If any reader has experience in this line we shall be glad to hear it.

As for dwarf apples among old prune trees we should apprehend failure unless extra water and fertilization are available. Even then there might be serious lack of light and air.

## WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 26, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

### SACRAMENTO VALLEY.

Weather conditions during the week have been nearly normal and favorable for growing crops. Very little damage was done by the high winds of last week, but much of the moisture in the soil was absorbed, and showers would be beneficial. Grain is filling well, and there is a good growth of straw; heavy crops are probable in nearly all places. Haying is progressing rapidly, and there is a heavy yield of excellent hay. The first crop of alfalfa has been secured in Sacramento county. Apricots are reported of large size at Fair Oaks; they are ripening rapidly, and the first shipment to the East was made from Winters on the 21st—eleven days later than last season. There will be a large crop of almonds. All deciduous fruits are in excellent condition and heavy crops are expected. Blackberries are ripening. Vineyards are thrifty. Orange trees are heavily laden with blossoms.

### COAST AND BAY SECTIONS.

The weather during the week has been cool and partly cloudy or foggy, retarding somewhat the growth of grain and ripening of deciduous fruits. The high winds of last week caused but little damage to fruit, but dried the soil and injured pasturage. Light showers would be very beneficial. Grain is in very good condition, except in the southern counties, where it is reported much of the wheat and barley will be cut for hay. Haying is progressing in nearly all sections, and good crops are the rule in the central and northern districts; all hay is excellent in quality. Prune trees in the vicinity of Santa Rosa are being considerably damaged by canker worm; the prune crop will probably be light in most sections. Apricots are of large size and will yield a good crop. Cherries are ripening rapidly; the yield will be less than average in many places. A good crop of Bartlett pears is expected. Vineyards and citrus fruits are doing well.

### SAN JOAQUIN VALLEY.

Cool, clear weather has prevailed during the week, with slightly higher temperature at the close. Strong northerly winds have slightly damaged the fruit crop in some places and injured grain considerably in the southern districts by absorbing the moisture in the soil. In the central and northern districts wheat is maturing rapidly, and there will be a heavy crop. Early barley is ripe in Madera county. Grain harvest will commence in a few days; some barley in Fresno county has been harvested. A large crop of hay is being gathered. Alfalfa is unusually heavy, but mixed with foxtail in Kern county. Pasturage is good. Irrigation water is plentiful. Deciduous fruits are in excellent condition and good crops are probable. Vineyards and citrus fruits are thrifty.

### SOUTHERN CALIFORNIA.

Clear, cool weather has continued during the week, with fogs along the coast. Drying winds have been injurious to grain and hay, but have caused very little damage to fruit. Late grain and hay are in bad condition and the yield will be very light. Much grain is being cut for hay. The hay crop is reported of better quality than average. Beans are up and looking well, though needing warmer weather. Sugar beets are growing rapidly. Deciduous fruits are in good condition in most places; apricots will be light in Orange county. Vineyards are reported in excellent condition. Walnuts and citrus fruits are doing well.

LOS ANGELES SUMMARY.—Cold week, with considerable cloudiness and fog; showers at the close were too light to do good. Haying continues; late crop about failure. No damage reported from wind storm, except the drying out of moisture.

EUREKA SUMMARY.—Crops are all planted in most sections; in some localities early sown grain is heading short. Trees are loaded with fruit. Green feed is plentiful.

### Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, May 27, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	.00	50.48	47.44	42.21	60	48
Red Bluff.....	.00	31.59	24.64	24.30	96	48
Sacramento.....	.00	17.81	30.00	23.28	88	46
San Francisco.....	.00	18.79	21.17	24.63	60	48
Fresno.....	.00	6.85	11.33	13.01	90	48
San Luis Obispo.....	.04	4.34	6.13	5.48	80	38
San Diego.....	.00	21.95	31.14	17.30	70	40
Los Angeles.....	.00	10.57	16.29	17.41	72	42
San Diego.....	.00	6.16	11.43	7.58	66	56
Yuma.....	.00	.68	3.60	2.89	96	52



## THE IRRIGATOR.

### The Orient Waiting for the Irrigated Products of the Pacific Slope.

From an address of WILLIAM M. BUNKER, before the U. S. House Committee on Irrigation at Washington.

The mutual dependence of irrigation and the Oriental trade is a fertile theme. As Commissioner of the Chamber of Commerce of San Francisco, I studied the trade conditions of the Orient, inspected the farming lands of eastern Siberia, followed the trans-Siberian railway route from Vladivostok to St. Petersburg, and learned the probable influence of that 6600 miles of railway on Pacific coast trade and products.

It had been assumed by many political economists and writers that the railway would develop vast areas of wheat land in eastern Siberia, and that wheat from that section would injure, if not wholly ruin, the Oriental market for our cereals. In the forests of Siberia, especially those bordering the Amur river and its tributaries, many publicists saw an equally deplorable menace to the lumber interests of the Pacific coast. My mission was to procure and present the facts bearing on these great interests, to mirror the situation and prospects, through an independent investigation, and make the proper predictions.

**THE DARK SIDE OF SIBERIAN FARMING.**—Eastern Siberia has an area of 132,000 square miles, a population of 1,328,150 and comprises mountains, plains and river valleys. The Altai mountain region, west of the Yenisei river, the former granary of Siberia, is 3000 miles from Vladivostok, and its products do not figure in the Russian market for Pacific coast cereals. There are many reasons aside from long haul that prevent the cereals of this granary from competing with those shipped from the Pacific coast. The Siberians are poor farmers, and the seasons are uncertain. A fine crop in one section of the fertile region of eastern Siberia is almost always accompanied by a famine in another. The current season illustrates the situation. In this Altai granary the failure of the crop induced a famine of appalling proportions. Nearly 8000 cases of typhus-hunger and scurvy were reported. As the peasants were finally forced to eat their seed grain, no spring crops have been sown. In a slightly lesser degree the same uncertainty of harvest results marks farming in the arable portions of Siberia, nearer the Asiatic coast, and, therefore, more likely to effect the Asiatic market for Pacific coast cereals. The grain lands in the eastern part of eastern Siberia consist, for the most part, of two plateaus; the larger one, near Blagovestchensk, on Amur river, is 500 miles square; and the other, lying between that city and Vladivostok, is 200 miles square. These figures are liberal approximations.

**WHY EASTERN SIBERIA CANNOT COMPETE WITH PACIFIC COAST WHEAT.**—The wasteful system of farming has lessened the available farming area. Certain land is sown every year without interruption and without manure. After six or eight crops have been raised from the field and its growing power exhausted, fresh land is sown. Spring wheat, spring rye, oats, buckwheat, and a small amount of barley, maize and millet represent the grain products. The grain, especially the wheat, is of inferior quality, and the percentage of starch is small. The Siberian flour is far less nutritious than that imported from the Pacific coast. California wheat sown in Siberia yields the inferior Siberian grain. The climate is at fault. The dry, small and shrivelled Siberian wheat seeded in California yields California wheat. In the opinion of experts this clearly shows the fault is with the Siberian climate. The winters in the Amur river region are practically snowless and the temperature is very low. Under favoring conditions and with a larger cultivated area eastern Siberia cannot, in my judgment, impair in an appreciable degree the Asiatic market for Pacific coast cereals. The discriminating tariff on flour in retaliation for our countervailing duty on sugar has injured to the disadvantage of our flour market in Asiatic Russia. The other portions of Asia are as available as ever, and no cereal product of Siberia will ever interfere with their demand for American flour. This fact is important when we reflect that the increasing tonnage of the Pacific ocean will furnish larger and cheaper shipping facilities for our Oriental trade. Our interest is in the Siberian cereal yield as a factor in the Oriental trade problem rather than in the details of farming. And yet the details are necessarily a part of the exhibit. They furnish the facts through which we reach a verdict.

**THE MISLEADING WILD FLOWERS.**—When I passed up the Amur and Shilka rivers the landings were marked by piles of sacked flour from Washington, Oregon and California. The bread on sale was made of mixed American and Siberian flour. The popular idea that Siberia, especially eastern Siberia, is a fertile belt, and with intelligent farming will yield a vast amount of wheat, is as far from the truth as the previous popular idea that Siberia is a block of ice on which convicts, police, and polar bears struggle for the mastery. In summer the banks of the Amur and

tributary rivers are dotted with wild flowers, grasses grow lush, and the traveller sees signs of surpassing fertility. The signs are more apparent than real. There is no clearly defined spring, the summer season is short, no friendly blanket of snow wraps the land in winter, and the climatic conditions that favor wild flowers are not necessarily friendly to wheat.

**LARGE FORESTS OF SMALL TREES.**—The encyclopedic articles on the timber resources of Siberia are misleading in that they teach the reader to think Siberia abounds in large trees. The forests of that country are as vast as the authorities state, and for days and nights the traveller rides on the railway through a dense growth of firs, pines, and birches. The trees are slender, as a rule, and in that portion of Siberia east of Lake Baikal, nearly all the trunks are about the right size for use in building log houses. There is no longer a superabundance of lumber along the Amur river and its tributaries. The fuel demands of the steamers on the river system have exhausted the timber within easy reach of the river; and in this, as in other parts of eastern Siberia, forest conservation is rigorously enforced. The largest single shipment of lumber ever made from the Puget sound was for Vladivostok.

**HOW PACIFIC COAST TRADE WITH THE ORIENT HAS BEEN HANDICAPPED.**—In invading the Asiatic market, the United States has been under great disadvantage. The proximity of the Pacific coast to the Orient has been more than offset by the superior shipping facilities enjoyed by European nations. Under the changed and changing conditions of ocean transportation, this superiority must speedily disappear. In 1899, 63% of the total annual trade of China was with the British, and although Great Britain could not show the same relative gain in Chinese trade that was credited to the United States, that country could partially console itself with the knowledge that 61% of the tonnage entering Chinese ports flew the British flag. European domination of Chinese trade has all along been due, in a great measure, to shipping advantage that is about to pass away.

**THE AMERICAN TRADE STAKE IN THE ORIENT.**—As illustrating the trade stake of this nation in Oriental countries, it may be said that our exports to the Orient have grown from \$40,000,000 in 1891 to \$115,000,000 in 1901; this while the total exports of the United States increased only 50%. Our imports from Oriental countries increased during the same time from \$105,000,000 to \$162,000,000, while the total imports were increasing only 10%.

While American exports to the Orient reached \$115,000,000 in 1901 the exports of breadstuffs, hay and dairy products from Puget Sound ports, from San Francisco, and from San Diego and Willamette, during the fiscal year ending June 30, 1901, as given by the Bureau of Statistics, Treasury Department, formed only a small portion of the grand total. The exports of breadstuffs, hay and dairy products from the Pacific coast to Oriental countries in the fiscal year ending June 30, 1901, had a total value of \$7,624,705.

**ORIENTAL DEMAND FOR PACIFIC COAST FOOD STUFFS.**—It has been the custom to appraise the Oriental trade from an Atlantic coast point of view. With the annexation of the Hawaiian Islands, the acquisition of the Philippines, and the increased maritime activity on the Pacific as a result of annexation, expansion, civilization, and industrial development, Pacific ocean commerce can only be comprehensively viewed from the Pacific coast points. The demand for shipping facilities on the Pacific has swamped the resources of every transportation company. No one can foretell the growth of Pacific coast commerce in the next few years.

Among the steamers to enter the Pacific coast-Orient trade this year are six, which will carry about 575,000 tons of freight in a year. Other large steamers are being transferred from the Atlantic to the Pacific. These are simply a few of the active and tangible signs of commercial expansion on the Pacific, signs that compel the attention of thinking Americans, signs that must convince every searching student that Pacific coast domination of Oriental trade is no longer a dream, and that one of the features of this trade will be a great Oriental market for the Pacific coast foodstuffs.

**THE NATURAL OUTLET FOR ARID LAND PRODUCTS.** To-day Pacific coast flour and dairy products are shipped to China and Japan in immense quantities, and largely to Siberia and other Asiatic countries, and the demand for our foodstuffs steadily increases. Slowly but surely flour is displacing rice in parts of China. Given favoring freight rates, the small reduction which increased shipping tonnage and cheaper operating expenses absolutely insures, and the Pacific coast will control the Oriental market for cereals, canned and dried fruits and other foodstuffs.

The Orient will absorb the products of the irrigated lands and those of all other Pacific coast lands within easy reach of tide water. This new market will obviate Pacific coast competition with the farm products of the East and Middle West. It may be assumed that this thought, the idea that these foodstuffs will furnish a reliable freight, impelled the Pacific ocean transportation companies to build their new steamers of from 10,000 to 20,-

000 tons. These companies realize that no matter what changes may be in store for the commerce comprehending silks, teas and other Oriental products, the Oriental demand for foodstuffs will endure for all time, and appreciation of American flour, fruits and dairy products will increase with use.

The Orient is the natural outlet for the surplus farm products of the arid region for all time to come. The Orientals cannot increase their food-producing resources to any great extent. China and Japan take all the rice Corea can spare, and such is the demand from those countries, that several times Corea has had to prohibit the exportation of rice. It is well known that under the most favorable circumstances there are famines in portions of China every year. The traveler in Japan is struck with the fact that the soil of that country is tilted to the final limit of productions. For the reasons given, and because of the growing popularity of our foodstuffs in the Orient, I maintain, first, that the Oriental market will easily absorb our food product surplus; and, second, that the greater the agricultural surplus available for export to the Orient, the better and cheaper will our shipping facilities become.

## FRUIT PRESERVATION.

### The Dyeing of Olives.

This subject has been commented upon already in our columns. The cases came up in Los Angeles last week and two parties were fined for dyeing olives black. They put in, in extenuation, letters from Dr. Hilgard of the State University, stating that copperas could be used to set the color in ripe pickled olives, although he did not advise them to use it. It seems that they were not satisfied with setting the color of ripe pickled olives, but undertook to dye green olives black, and, perhaps, used so much copperas in this effort that injury resulted to consumers. The fact that Prof. Hilgard gave the information which they made bad use of has led to hard talk about him at the south, and, in order that his relations to the subject might be fully understood, he has prepared the following statement:

**PROF. HILGARD'S STATEMENT.**—In view of the public comments made on the coloring of olives by means of a small amount of copperas or iron sulphate, mentioned by me to several parties as possibly permissible for the purpose of darkening the tint of ripe pickled olives, it seems proper that I should make a statement of the facts in the premises and of my views in the matter.

As is well known, I have for years protested strongly against the use of any and all antiseptics, artificial colorings or decolorants in food products. To be now placed in the light of advising such a procedure in the case of olives, seems quite anomalous. I have been more than sneered at for my opposition to the excessive sulphuring of fruits so commonly practiced in this State to render them unnaturally and ghastly white in color, when they should be of a natural brownish tint, retaining their flavor, which is destroyed by the sulphuring. In sheer weariness of the bootless conflict, I have remained silent on this topic for a number of years; but, in the meantime, most European governments have passed laws excluding such fruit from importation. Our own citizens have justified the action by the statement that they could not sell their product unless it was so bleached; but few among them were willing to put such oversulphured fruit on their own tables.

For the last three years I have been frequently asked to give some prescription by which ripe pickled olives could be made to retain the black tint they have on the tree; but no mode of procedure compatible with proper curing was found to accomplish this. Moreover, some of the best varieties for pickling, e. g., the Manzanillo, have a very light color at best, and can not be pickled so as to have any but a light "olive" tint. Until this year I have always replied to such inquirers that the public demand for black olives is a mere fad, and I have in public and in private urged both producers and dealers to discontinuance it and refuse to handle the artificially colored, deep bluish black fruit which I saw in sundry shop windows. The invariable reply was that these brought the highest price, and that, as the public wanted such fruit, they should have it. During the past pickling season there was over a score of such letters, only more pressing, and suggesting the use of logwood, the "diamond dyes" (poisonous aniline colors) and other objectionable colorings. Feeling sure that some of these would be used unless some suggestion was given, and mindful of my experience with the sulphured fruit, "California fruit salt," "salyx," "preservaline" and other nostrums, the use of which I had vainly striven to prevent, I finally gave, as the least objectionable means of deepening the color in properly cured olives, a very small amount of copperas or sulphate of iron, with which I had myself experimented, assuring myself that even my delicate digestion was not disturbed by the minute



amount of iron thus introduced. There was no trace of the well known "puckering" or styptic taste of copperas, even to the practiced tongue of the chemist, and certainly none of the blistering effects mentioned in the Los Angeles case, which must have been due to an enormous overdose used. In the olive the iron is rendered insoluble soon after it touches the remaining tannin of the fruit and so, of course, becomes imperceptible to the taste. Such insoluble iron compounds are medicinally administered in doses of from two to five grains. Comparing this dose with what would be taken by a person using the pickle, we find the following figures: A "pea size" of copperas weighs about two grains. There is thus added to the gallon of olives about one-third of a grain of pure iron, which is approximately one-third the dose usually given medicinally in organic iron preparations. Three-fifths of this amount is distributed among 800 olives—the average number in a gallon; a dozen olives would, therefore, contain between one-fifty-sixth and one-sixtieth of a grain of an organic iron compound such as is medicinally given at the rate of from three to five grains, or, say, a one-hundred-and-eightieth of such a dose. A pint of Lytton Springs water conveys to each guest about forty times as much as this and is considered highly beneficial. On the other hand, a pound of fully sulphured dried fruit contains from fifteen to twenty-five grains of sulphuric acid, or slightly more than Radam's noted microbe killer.

I give these calculations merely to prove that I can not be held responsible for the dire effects claimed to have been produced by the Los Angeles olives. What mistake was made, accidentally or purposely, I can only conjecture; but if the commotion stated to have been created among the producers and handlers of pickled olives shall have the effect of abating once for all the practice of coloring fruit to suit a silly fad of consumers, those who now claim to have suffered grievous injury at my hands will find that a great service has been done them in enabling them to market freely hereafter fruit in its natural condition after pickling, instead of being "held up" by the grocer. By all means let them refuse to handle any fruit not approved by the Board of Health, and let that Board do its full duty, not only with regard to colored and decolorized fruit, but also in the matter of the antiseptics so commonly and excessively put in preserves and jellies, so widely used as delicacies to be given to patients. Whenever it can be truthfully said that California fruit products are exempt from all such adulterations, it will increase enormously the market demand for them.

Berkeley, May 22.

E. W. HILGARD.

## HORTICULTURE.

### Renovation and Restoration in Orange Trees.

Mr. A. J. Drothzen of Highlands, San Bernardino county, has, according to the Highland Messenger, done such good restorative work in the orange orchards of Mr. Valentine Peyton that he was requested to put upon paper his views upon the proper care and training of the orange. Mr. Drothzen complied with this request and produced the following sketch, which our orange-growing readers will find of much interest:

It is difficult to write an article about pruning orange trees in a definite way that will suit in all localities, as the trees grow in a different way, according to the soil and local climatical conditions. The trees do also need different care and training. In some localities the trees are injured by frost, in others by sand storms and hot winds.

The Washington Navel is naturally a semi-dwarf growing tree and should always be trained to grow low, but trimmed up from the outside in a symmetrical way, the center limbs taken out while the tree is small, so that the tree may get the shape of a fine-shaped umbrella tree. If trees are properly kept clean and open in the center, the suckers taken out, there will be very little or no dead wood, and propping almost unnecessary; the tree will generally produce its heaviest crop on the lowest limbs. But this system of starting the Washington Navel orange groves has been followed but by very few, as almost everybody has endeavored to get the trees to grow tall and vigorous in the top, expecting that the bigger the tree the more fruit it will give, not taking into consideration that the trunk and the roots have not had time to develop as fast as the heavy growth of the top.

**SUCKERS:**—In this and Riverside counties the orange trees are more apt to produce suckers, mostly in the center of the trees; and now comes the time to cut them out; if not, these suckers will eventually form the main body of the tree, and all the lower underwood will gradually die away, so that the tree will not be what it was originally intended for—a low or dwarf-growing tree.

But what is a sucker? A young sprout one year old? Well, that is a young sucker and has not had time to do very much harm yet; but when this sucker has grown into a large limb, 5 to 10 inches in circumference and 10 to 15 feet long, and then has branched

out with a big crown top 4 feet above the rest of the tree, then comes the time it causes destruction to the tree. It takes up the main flow of the sap and deprives the fruit-producing twigs of their share. The sucker will set a few oranges in its top, of which most are spoiled by the winds. When a tree has got three, four or perhaps a half dozen growing limbs in its center, it is a very poor tree in my estimation, as the tallest branches will first start to break down, both from winds and the heavy weight of the fruit, and the orange pickers will do their share of breaking down a lot of limbs while trying to gather the few oranges which remain in the top of these tall-growing suckers. Then, as the tree is breaking down, other suckers are starting up that in their turn ascend above the older growth and thus branch out, forming a new top and leaving the lower fruit-bearing wood beneath to be in time smothered and starved out. As the tree grows taller and taller, the sap goes to the top, and eventually the tree will turn into a poor and shy bearer.

**CHANGED CHARACTER OF THE TREE.**—Many orange growers claim that they have or have had the Australian Navel trees in their groves, although they know that their trees were budded from the good Washington Navel trees. This is not only a mistake, but utterly impossible, because the Australian Navel orange is a distinct variety in itself, the fruit is seedy and in this country entirely worthless, and very few trees, if any, have been budded from the trees imported of this variety. The Navel orange will very often change by budding or grafting—that is, the stock it is budded on will turn the bud into a freak. The root or stock is the cause of this change. But the trees in this locality improperly called Australian Navels are generally not very bad trees, most of them were good Navel trees when young, but the stock they were budded on was a thrifty and fast-growing Seedling, and, as the tree has been allowed to grow at its own habit, it has turned into a wood-producing tree and a shy bearer—the same will happen to any tree that is overgrown with suckers. Had the tree in a proper way been cut back in time and trained to grow low and more compact, it would have had a dense foliage and produced fruit like the rest of the good trees in the grove. Some people have another name for these kind of trees—they call them degenerated Navels, as the trees bore well at first. My opinion is that, if such trees are properly cut back, it will do more good than to have them rebudded, as is the usual custom.

We have got another freak Navel which is of a slow, dwarfish growth. This tree blossoms all the year around and produces only a few imperfect oranges. It will do no good to rebud this kind of tree. Fertilizing or any kind of treatment to the roots of the tree is also useless, as the cause of the worthless tree is in the Seedling stock it was budded on. Such trees should be dug out and replaced with others.

**NOT OPEN CENTERS.**—In advocating to raise the oranges from the outside of the tree and having the center limbs of the tree taken out, I do not want to be understood that the top of the tree should be cut out, like pruning a peach tree, and thus allowing the hot rays of the sun to directly enter the center of the tree. This may be necessary when the large suckers are cut out, but the tree should be allowed to fill in the top, in such a way that the top forms a symmetrical round shape, with small, fruit-producing wood. All heavy sprouts which grow out on the top or on the sides of the tree should be cut out, as such sprouts will set a few oranges in their tops the next year, and thus lop over or break off, and do more harm than good to the fruit twigs beneath.

Anyone having any suggestions or critical remarks to make on my proposed system of pruning is, for my part, very welcome to do so, as I feel very eager in defending my methods of working—thinking the time will come when many of the now-with-suckers-overgrown Navel groves will be breaking down, spoiling and deforming the trees.

### Foothill Peach Growing.

At Wyandotte, Butte county, says the Oroville Mercury, are many profitable peach orchards. Most of them are small and tilled by their owners, and all given that degree of care necessary to the best results. These peach orchards pay handsomely. In fact, it would be difficult to find an investment which pays better returns than the beautiful little orchards of the Wyandotte section. To buy land, clear, plow and plant it and bring the trees to self-sustaining condition costs less than \$200 per acre. After they have matured a net return of \$100 per acre has been realized.

John Watkins of Wyandotte lately gave us the actual figures on his peach crop of last year. He has five acres of bearing peach trees and the figures are as follows:

Receipts—Fresh fruit sold, \$10; dried fruit sold, six tons at 6 cents per pound, \$720; total, \$730. Expenditures—For pruning, cultivation and water, \$16 per acre, \$80; for curing and handling fruit, \$150; total, \$230. Deducting the expenditures from receipts, Mr. Watkins finds that he received a net return of \$500, or \$100 per acre.

Other Wyandotte peach growers had like success,

and the return is not phenomenal. Mr. Watkins has secured about the same since his orchard matured.

The area devoted to peaches in the Wyandotte district increases every year. The people there know they have a good thing and they increase their acreage as rapidly as their circumstances will permit. The orchards are scattered here and there and are surrounded on all sides by forest lands which await the ax and the plow to be converted into income-bearing orchards. The best of these fruit lands can be secured at prices ranging from \$25 per acre upward, and the timber will almost pay for clearing.

### Apple Growing in the Pajaro Valley.

The great and growing apple interests of the Pajaro valley have an able and enthusiastic expounder and promoter in the person of Hon. W. R. Radcliff of the Watsonville Pajaronian, who has seen the interest develop from small beginnings to its present great commercial importance. We take from Mr. Radcliff's writings frequently current comment, and we are glad to have a general review which will enable our readers everywhere to understand apple growing in the Pajaro valley in many of its aspects.

**THE TRUE POLICY.**—In point of agricultural wealth the apple easily ranks first in this highly flavored valley, therefore it behooves the people here to be abreast of the times that they may succeed in keeping the leader well to the front. New and unexpected conditions, which tax the minds of the closest students of apple growing, are constantly presenting themselves, and while the question is seemingly old yet it is ever new and interesting.

To begin properly with the apple industry it is vitally important that the very best resistant stocks be selected and put out. It is equally imperative that the proper soils be selected for the planting of young trees. One variety will thrive in a certain soil while another will fail, hence the necessity of having the soil chemically analyzed. This may be done by sending samples of soil at depths of 1, 2, 3 and 4 feet to the experiment station of the University of California, where they will be analyzed free of charge, the only expense to the orchardist being the small express charges on the packages of soil, which should each be numbered according to the depth they were taken from. That the same soil is not equally conducive to the growth of different varieties of apples is sufficiently demonstrated in Pajaro valley in the case of Newtowns and Bellefleurs. One variety will flourish in certain soils while the other does poorly.

**PLANTING AND CARE.**—When an adaptable soil is chosen for a certain stock the next important step is to put the young trees into a carefully prepared piece of land so that their growth may not be interfered with by a packed or hard surface. In cultivating a young orchard too much care cannot be exercised in protecting the tender trees from bruises and other injuries. At such time as the trees will warrant pruning they should be carefully and scientifically shaped so as to cause a strong union of the limbs and body of the trees. This system will prevent the limbs from splitting off when the trees become older and are heavily laden with fruit. Much of the future usefulness of a young tree depends upon systematic and correct pruning. The work must be done in a manner that will allow sufficient sunlight and air to penetrate the branches to stimulate the trees in bearing fruit. The above points are two important elements in successful apple growing. The shaping of a young tree is another point that should receive careful attention. The shape of a tree has much to do with its power to resist damaging winds and has a great deal to do with its fruit-bearing powers.

As the trees advance in age many obstacles arise and they require constant care. Systematic pruning must continue incessantly from year to year or the tree will all run to wood at the expense of the fruit. The land must not be allowed to run together after a rain. If this is permitted the moisture will soon forsake the soil. By cultivating the ground under such conditions the moisture will be retained. The depth of cultivation must depend upon the nature of the soil and the amount of rainfall.

**PROTECTION.**—There will be pests to cope with and vigilance is the price that must be paid for good fruit. A successful winter spray, consisting of lime, sulphur and salt, has cleared the Pajaro valley orchards of San Jose scale and other pests, but the codlin moth, woolly aphis and canker worm have not as yet been mastered. The main excuse to be offered for their presence is the lack of summer spraying, which is apt to be neglected just so long as orchards are sold under the present system. When fruit growers sell their product on the trees for a term of years they are apt to lessen their care of the trees, as they feel sure of receiving good prices for their apples for that period at any rate. Another drawback to proper summer spraying is the opposition given the movement by the men who purchased the orchards. They are afraid that the trees will be burned and their fruit output reduced.

**PACKING.**—The best means of properly meeting



the issue that confronts them is for orchardists to pick, grade, pack and market their own apples. By so doing they will be enabled to keep in close touch with their fruit from the time the tree is planted until the matured fruit is in the hands of the consumer. They have everything at stake, consequently all to lose or gain as the case may be. The orchard acreage is rapidly increasing in Pajaro valley and preparations must be made to successfully handle the immense crop of apples that will be produced here within the next five years.

After the questions of planting, cultivating, pruning and spraying have all been satisfactorily solved the next important steps to be taken are those pertaining to picking, grading, packing and marketing. The picking must be done in such a manner that the apples will not be bruised, and by exercising equal caution in grading and packing a first-class article can be placed on the market. Right here it might be well to state that unstinted thinning of apples is another good method of raising their standard of excellence. A tree that is overburdened with fruit cannot be expected to produce a superior product. Quantity must give way to quality, and the only way to attain such conditions is to thin rigidly.

**IRRIGATION.**—Another important question that is at last dawning upon the minds of orchardists is the advisability of irrigating their orchards. Many of the leading orchardists are in favor of it. Tests made by different growers in this valley during dry years have proved the value of proper orchard irrigation. M. B. Tuttle irrigated a piece of orchard land a few years ago when the season was very dry and raised a good crop of apples, while other orchardists who did not irrigate had an extremely meager crop. Wm. McGrath, who irrigates his cherry orchard, has raised a heavy crop of cherries in dry years when scarcely any cherries were raised in other orchards of the valley.

The upland especially should be irrigated once or twice during the long dry season. Irrigation of fruit trees renders them far more capable of producing strong fruit spurs the following season. In cases where orchards are not irrigated during a dry season the fruit spurs appear in a frail condition the following spring and break off easily when the fruit season comes on.

Chas. Smith has purchased a 5-inch Dow piston pump and engine and 6000 feet of flume which he will put up on the river at his Stony Ford ranch, near Aromas. C. B. Lewis finished the survey work on the lines last week. The water will be forced about 600 feet to an elevation of 50 feet, and from that point it will be taken in ground flumes over Mr. Smith's 125-acre orchard. It is his intention to irrigate his orchard once during the dry part of the season and he will follow this, as soon as the ground will permit, with cultivators to keep the soil from baking and to retain the moisture. Mr. Smith's pump house will be in close proximity to the ranch home. The 5-inch piston pump is capable of furnishing an abundance of water for the trees and Pajaro river is handy to the orchard.

A good work has been commenced and it is hoped that others will follow. The orchard interests of Pajaro valley will no doubt be greatly benefited by a system of judicious irrigation. Even some of the orchards on lowlands would be stimulated to more vigorous action by irrigation and their fruit value would be enhanced. Time will prove the wisdom of the plan.

#### Tree Planter and Nurseryman.

The suit of L. P. Bracket vs. H. Martens for damages was tried before Judge Rhodes last week, says the San Jose Mercury. The suit grew out of the purchase from Martens, who is a nurseryman, of a quantity of fruit trees by Bracket, an orchardist. The trees, it is claimed, were warranted by Martens to be French prunes, on myrobalan root, and guaranteed to be first-class in every respect.

Bracket planted the trees and cultivated them for three years and then they began dying and, as he claimed, were a total loss, and Bracket also lost his labor and the use of his land during three years. The case virtually hung upon the interpretation of the word "merchantable," or, the trees being warranted as merchantable, the question arose as to how far the defendant would be liable for damages under that warranty.

In deciding the case the court held that the trees were upon myrobalan root, but were defective and "not fit for the purpose for which they were sold," which was held to be the proper interpretation of the term "merchantable," and that not being fit for the purpose intended the defendant thereby became liable for damages. In assessing the damages the court held that they were measured by the difference between the value of the land with the worthless trees upon it and its value if set with healthy trees. Damages were allowed plaintiff in the sum of \$1500.

In the first installment of the adjacent article on the Holstein-Friesians credit was given to E. A. Gammon rather than to Walter Gammon, whose name now appears. The two parties are brothers and prominent farmers of the Sacramento river region, but each is entitled to his own credit.

## THE STOCK YARD.

### Are We Making a Mistake in Neglecting the Holstein Cow?

NUMBER II.

By WALTER GAMMON at the Courtland Farmers' Institute.

**ADVANTAGES OF KEEPING STRAIGHT.**—Shorthorns have been bred too long for beef and Jerseys too long on a no-beef proposition for us to ever expect that a superior animal is going to result from a cross which, with any degree of certainty, can perpetuate its desirable and eliminate its faulty qualities. If one is looking for milk and butter, he will almost invariably see beef, and, if looking for beef, you are just as likely to get milk and butter—a constant, ever-occurring anomaly will be presented. Why not persist in keeping all domestic animals pure when it is positive an element of added value attends the practice to the extent of, to say the least, twofold? Again, one becoming known for the choiceness and pureness of his flocks and herds, surplus stock is greatly sought after for breeding purposes. Often this element alone will quite equal or exceed in a single year the net return from his business, be it either as butter, cheese or beef production. One takes more pains and pride in his work when he is dealing in thoroughbred or pure-bred animals, and just to that extent it is often found that success or failure in the undertaking may result. He soon becomes a noted breeder and takes delight in showing his beautiful animals. Then is it not reasonable to say that some visitor, after being thoroughly impressed with the beauty and utility of these animals, has entered its ranks as a breeder and proved himself in after years a benefactor of the race, having added much to the noble occupation of stock breeding that otherwise the world would have been ignorant of, and by far the loser? Circumstances as small and insignificant as this may seem to be have very many times changed the whole outlook of men who have had not a small part to do with the world's destiny.

Of the three breeds above mentioned both the Shorthorn and Jersey are familiar to you. Their appearances, characteristics and adaptability to your needs, you are conversant with. But is there a breeder of these animals, either in their purity or otherwise, within my hearing who has found in either of these or in their cross an animal that at all approaches his ideal of an "all round" animal, and one that produces its kind? Do these animals perfectly satisfy him so that he has no longing for an exemplification of some virtue in these animals wanting but that his long cherished ideal must have? In other words, do these animals represent to him, who is looking for a breed that excels in a variety of ways, the acme of all stock breeding? Not so. In our immediate vicinity are breeders of these types who have persisted with these breeds for over a quarter of a century, and we have yet to find one that is at all confident or satisfied with his results; and were the facts truly known, there is good reason to believe that twenty years ago they had, if not better, fully as good a herd. Neither of these breeds we are disposed to believe are able to meet the requirements of our conditions to their fullest sense—the one strong in beef, and not classed as a dairy animal at all in the literature on that subject, the other without a single virtue when we apply the beef test.

Before passing the Jersey and Shorthorn breeds, if it be the aim of anyone to make dairying a specialty it is important that real serious defects be pointed out. In the Jersey it is very essential that she should be giving milk when she is close to twenty months of age, otherwise to a great degree you will find her sterile. This is an objection because her size at that time demands that for almost the entire period of her first lactation she cannot give a sufficient amount of milk to at all make it profitable for her care. Again, it has a strong influence in keeping these animals small and inferior in size. She must produce a calf each year regularly or else this same barrenness is likely to appear.

In the Shorthorn we find that when by the selection of a few choice animals as a nucleus for a dairy out of a large herd or number of different herds, which it is quite likely one will be obliged to visit before he finds what he wants, it is next to impossible to get a heifer from any of these selected cows that will ever prove nearly as desirable an animal as her dam. In a large number of cases it seems to be the result of experience only that we can secure one heifer out of five that will ever develop into a superior cow. If that be the case, does it not prove that one must needs handle a large number to ever get together a good herd? In fact, we believe this defect alone in the Shorthorn, if one should confine himself to his own herd, so far as cows are concerned, absolutely prohibits him from ever having a desirable herd of dairy animals. One can obtain such a herd of Shorthorns, providing he lives long enough and will go into other herds and make liberal purchases, but he can never maintain it with any regularity. We have yet to see a herd of thoroughbred or purebred Shorthorns that make a creditable showing

when we apply the dairy qualifications to each and every animal. Is it to be expected that any of us taken at random can in a short lifetime do what others have failed to accomplish after persistent efforts for ages? These defects just mentioned, be it remembered, refer solely to pure-bred animals, for we are dealing solely with that class.

Now, both of these breeds have their place and are highly esteemed, and rightly so, in fulfilling the wants for which they were created, but under our conditions their right must give way to a breed that more fully and quite fully seems the one better adapted as the "survival of the fittest."

We will now look to the Holstein cow, and after finding out more about her apply the test at our leisure, and see if we are not sound in fact as well as fair in our comparison of breeds.

The Holstein-Friesian cattle are rapidly occupying the richer and more important dairy sections of the country. From the earliest records of dairy husbandry these cattle have been used and developed for dairy purposes. They are the descendants of the cattle bred by the Friesians or Hollanders two thousand years ago. This breed of cattle is the oldest pure breed on record. It was celebrated throughout Europe before the foundation of any of the other thoroughbred breeds was laid, and has steadily improved until its present superiority is recognized. It is essentially a practical breed.

**SPREAD OF THE BREED.**—If allowed to spread without artificial restrictions, the value of a breed may be judged somewhat by its aggressiveness—in other words, by the territory over which it spreads in competition with other breeds. Especially is this true of dairy breeds found as such breeds are only in civilized countries and on valuable land. According to a statistical authority on stock matters, this breed is found in more countries, occupying more territory and probably producing more milk, cheese and butter than all the other dairy breeds combined. Take, for instance, the kingdom of Belgium, the most densely populated State in Europe. Three of its provinces—Antwerp and East and West Flanders—are largely devoted to dairying. The peculiar location of Belgium makes it equally easy for the dairymen to import from England, North Holland and the islands of Jersey and Guernsey. The Government has granted subsidies for the importation of foreign breeds to improve the stock of the country. No country is so well situated to pass judgment on the various breeds. The dairymen of this country have been acting the part of a great jury, and while personally we believe that the system is a farce and might better be consigned to perdition, still, in actual experience we find the average jury deal very largely with economics, and when a personal matter becomes in the least way involved a self-interest largely decides the character of the vote. Now, the suffrages of this people, according to our Netherlands consuls in their reports brought forcibly to the attention of our Department of State, were recorded invariably in favor of the Holstein-Friesian cow. Other breeds can not gain a footing after repeated trials. It is claimed by no less an authority than Prof. Low, an eminent English author on breeds of cattle, that early importations of Dutch cattle exercised great influence on the formation of the Teeswater—afterwards known as the Shorthorn—breed.

**CLAIMED TO BE A GENERAL PURPOSE BREED.**—The type of the Holstein-Friesian breed is technically called the milk and beef form. It is particularly strong in all vital and essential particulars. If there be such a thing as a general purpose breed, we claim such a distinction for the Holstein-Friesian. This breed excels in milk production, it is superior for veal production, and very valuable for beef production. For generations the natural conditions under which these cattle have been developed have been most favorable for this unity and combination of qualities. Let me quote from an address of Prof. Roberts, dean of Cornell Agricultural College, made before the New York Dairymen's Association: "I had," he said, "the good fortune to spend some time in North Holland and Friesland. If anywhere on the face of the globe there exists a race of uniformly good milkers, the Dutch have them. I ate of the beef for three weeks and of the English beef for two, and while not so fat as the Shorthorn, it was to my taste superior."

Mr. T. H. Ramsay, manager of the Stanford Vina ranch, California, writes: "We sold 104 head of steers a few days ago, none of which were over three years old and some about two and a half. The entire lot averaged 1254 pounds in weight after standing twelve hours in a dry corral. The price paid was 4 cents per pound, gross weight, delivery being made on our farm. Many of these steers were thoroughbred Holsteins, having been raised on skim milk at our dairy, afterward being removed to alfalfa feeds, but were never fed during the winter anything except that which they picked up in the pastures—that is to say, we did not feed them hay or grain—and at time of selling they were taken from alfalfa feeds. Holstein blood predominated in the entire lot. The price is the best obtained in our section of the country this season, and the cattle were admitted to be the best lot shipped from this vicinity. These cattle, it will be seen, brought an average price of \$50.16."

(TO BE CONTINUED.)



## Agricultural Review.

### ALAMEDA.

**LIGHT CHERRY CROP.**—San Leandro Reporter: There have been a number of buyers around during the week, but the growers are still holding out for better prices than those offered by the pool. The combine offers 3 and 5 cents, but is willing to pay more, and from the outlook the growers have the best of the situation. The whisky, or cocktail cherry packers, have purchased all the large orchards near Centerville except three, and they have done some business here during the week. They have a 10-year contract proposition that has been taken up by some growers. The yield in nearly all varieties is very light and becomes more noticeable as the season advances, and the growers are determined not to sacrifice their small crops for the prices offered by the pool. The apricot crop locally will be short.

**PRICES FOR APRICOTS AND CHERRIES.**—Haywards Review: The first part of the year's crop is rapidly ripening so that a few days will see the early cherries being picked. The outlook on the whole is a good one for the growers. The apricot crop, according to the estimate of a conservative orchardist, will be about one-fourth less this year than last. The fruit, however, will be good and the market ought to be firm. One grower is said to have sold this week at \$28 per ton, eight to the pound. The cherry crop is estimated to be one-third better than last year. The price will be about 3 cents for blacks and 5 cents for Royal Annes, which is not fair to the growers. With the whole season's pack sold at high prices beforehand, the cannery could pay more, but naturally they won't when they can get the fruit for the lower prices.

### HUMBOLDT.

**CREAMERY PRICES.**—Arcata Union: Creameries in Eel river valley paid this month as follows: Abramson 20c, Cold Brooks 21c, Cream Valley 21c, Excels or 20½c, Grizzly Bluff 21c, McKinley 21c, Pioneer 21c, Riverside 20c, Silver Star 20c, Eel River 20½c. Prices paid at Arcata creameries: Arcata 20½c, Laurensen 21c, Premium 20½c, Cauzza Bros. 20½c.

### KERN.

**TO GROW ORANGES ON THE DESERT.**—A Bakersfield dispatch states that the Kern County Orchard Farm Co. has been incorporated with \$15,000 for the purpose of raising oranges on desert land. This company has secured 40 acres of land on sandy foothills north of the town of Kern and will set the land out with orange trees.

**FORAGE PLANT FOR BEES.**—P. D. Barnhart gives in the Bakersfield Echo his experience with "withania organelia," a plant which he bought 3 years ago, and says "it is new to floriculture in this country and is classed among vining plants. Its habit of growth is like the ivy geranium. Three seasons' trial in this city—Bakersfield—has proved it to be admirably suited to the hot, dry summer climate. It is absolutely free from insect pests, flourishes in the bright sunlight, grows in soil that is strongly alkaline, and that, too, with comparatively little water. While it is a vigorous grower, it does not attain the length of vines here that the disseminator said it would, 30 feet in a season. It is jointed, has small, dark leaves, and bears a small white flower at the axil of every leaf. Frost kills the top, but the roots remain unharmed in the ground where it does not freeze. It is a perennial evergreen in frostless sections of the country, and is easily propagated from soft wood cuttings or by the division of the roots.

### LOS ANGELES.

**OLIVE GROWERS ORGANIZE.**—Pasadena Star: The olive growers in the vicinity of Los Angeles met at the Chamber of Commerce in that city on May 20th to perfect their organization. Immediate steps will be taken to incorporate and the following gentlemen were elected to become the incorporators of the association under the name of the Central Olive Growers' Association of Los Angeles: Charles H. Frost, James G. Warren, Harvey Sturdevant and W. E. Hughes of Los Angeles, William Bowering of Charter Oak, Charles V. Pleukharp and Henry A. Lewis of La Crescenta.

### MODOC.

**SHEEP-SHEARING MACHINE A FAILURE.**—Alturas Plaindealer: Harry Payne, Johnny Gosch and Charley Walton returned Saturday, having completed the work of shearing the Surprise valley sheep. They report that the shearing machine introduced there is a failure, neither doing the work well or expeditiously. They started out again this week with a crowd, having secured a contract for shearing 21,000 head on this side of the mountains.

### ORANGE.

**A WONDERFUL COW.**—Fullerton News: W. D. Gilmore, residing between Buena Park and Los Alamitos, has a cow with an appetite and stomach that would make an ostrich or goat turn green with envy. The animal is a splendid milker, but will swallow anything that will go down her throat. Recently bossy was sick and Dr. W. A. Connelly, veterinary surgeon, was called. He found symptoms of a very serious stomach trouble and at once performed an operation in the presence of neighbors. From the overtaxed principal organ of digestion the veterinary removed one horseshoe nail, eight wire nails, from 3 to 8-penny in size; five pieces of baling wire, from 1 to 3 inches long; one shoe button, one large steel plate from the heel of a man's boot, four stones as large as walnuts, seven pieces of leather from 1 to 6 inches long, and eight large pieces of hard wood. The cow still lives.

### RIVERSIDE.

**A CASE OF SUSPENDED ANIMATION.**—Press: In the spring of 1900 a century plant of nine years growth which was crowding the adjacent orange trees was dug up at the home of Geo. S. Myers, after the branches of the plant had all been removed with the saw. The trunk was then rolled to the lumber yard to be burned when dry. Last spring some brush was burned at the bottom end and the fine roots scorched off. About a week ago, after having lain on the ground two years, signs of life appeared, a flower stalk pushed from the upper end, curved gracefully and is now 6 feet high and proceeding skyward at the rate of about 6 inches per day. Guy wires will be fastened to the stalk to prevent the body from rolling over on account of the stalk becoming too heavy.

**EXACT YIELD OF BARLEY.**—Imperial Press: Before harvest there were those who said that Thomas Beach's barley crop would go four tons to the acre if barley ever did, but it was doubted by many people if barley could be made to yield such a quantity. Mr. Beach says that he has kept careful account of the yield of five acres, from which he weighed out 19 tons and 1670 pounds. Afterwards he raked up two small "jags" of loose hay, carrying the total to a trifle over four tons to the acre. This hay he is selling at \$17 a ton, making a yield of \$68 an acre for barley hay. This is the biggest yield of barley in the valley, but it does not greatly exceed the average product of fields sown before February 1. Contrasts between this crop, which had but three irrigations, and other crops sown in March and April, which are not doing nearly so well, though demanding more attention, are showing farmers the advantage of sowing crops in the proper season.

### SACRAMENTO.

**MANY NEW VINEYARDS.**—Galt Gazette: Few people have an idea of the enormous acreage that has been planted to grapes during the present season in the section of country lying between the Cosumnes and Mokelumne rivers. The planting of grapes north of Woodbridge, in the Acampo district, and on either side of the Mokelumne east to Clements, has been exceedingly large. Many extensive vineyards have been planted in Liberty township and the young vines are looking very thrifty and are being well cared for and thoroughly cultivated.

**LARGE SHIPMENT OF STRAWBERRIES.**—Folsom Telegraph: The strawberry shipments from Folsom are now very large, the number of crates sent out daily being about 400. The berries from this section find ready market, and some of them are sent into other States. Each year the number of crates shipped from here increases, and it is predicted that in a few years they will go out by the carload.

**FARM LABORER BADLY HURT.**—Bee: T. B. Hersey had his foot nearly cut off at the ankle on the Casmer ranch on the Cosumnes river this morning. He was driving a mowing machine, when the left wheel ran over a log, pitching Hersey out and throwing him directly in front of the mower. The horses being rather wild started to run, and it was only by great presence of mind that Hersey got his body from in front of the shears. He could not get his foot out in time, however, and as a result it was nearly cut off. It is probable that the foot will have to be amputated.

### SAN BENITO.

**PRICE OF HAY BALING.**—Advance: The hay press owners of the valley have fixed the price of baling this season at \$1.25 per ton. Nine presses are represented in the agreement. The hay balers have fixed the schedule of wages for men at the box at 18 cents a ton, welghers 15 cents, power drivers \$1.25 per day. These prices are expected to result in improved work in the field.

### SAN BERNARDINO.

**ORANGE CROP WILL BE LATE.**—Highland correspondence of the Sun: The orange crop of 1902 promises to be later by several weeks than that of last year or the year previous. Only a few days of May yet remain, but many groves are just passing out of full bloom, and unopened buds may be found in almost every orchard. In June, 1900, oranges measuring 3 inches in circumference were plentiful. Continuous and excessive warm weather may hasten the crop along to some extent, but it is a safe prediction that Thanksgiving oranges will be scarce in this locality. As Highland, with its warm, sunny slope is counted among the "early" sections, it is scarcely probable that any large number of November oranges will reach the market from southern California.

**SHIPPING MARMALADE EAST.**—Redlands Facts: H. P. D. Kingsbury, proprietor of the Kingsbury marmalade factory, is shipping some of his products to the Eastern markets. As yet the factory has not reopened for operations, but will probably do so as soon as there is sufficient fruit on hand to justify the run. Mr. Kingsbury is very well satisfied with the success of his venture thus far, and expects to continue the good work.

### SAN DIEGO.

**HAY CROP SHORT BUT QUALITY GOOD.**—Sun: The hay harvest in El Cajon valley is under full headway. Some of the early sown grain is turning out well. The average yield for the entire crop will approximate one-half ton to the acre—not as good as last year's crop by nearly one-half. The quality of the hay, however, will be better, as the straw is short and the heads of good size, hence will make good feed without other grain. It is probable that a good deal of the barley will be allowed to ripen and be cut for grain.

### SAN JOAQUIN.

**THE "DOC" BARNHART RANCH SOLD.**—Stockton Independent: What is known as the "Doc" Barnhart place, located 4 miles south of Lodi, has been sold to Fred Metler of Dakota. There are eighty acres in the ranch and it brought about \$60 an acre. The land is under the Woodbridge irrigation system and the new owner will use water when necessary on the soil. At present there is a crop of wheat and barley on the property, but Mr. Metler intends to plant the greater part of the farm to vines and fruit trees, while a portion of it will be set aside for alfalfa.

### SANTA CLARA.

**ANGORA GOATS FOR MONTANA.**—San Jose Herald: John W. Fulton of Helena, Mont., left San Jose for the North after having bought 2000 head of fine Angora goats. He predicts that before long Montana will have a great many goats on the ranges. "I have studied this Angora goat question carefully," said Mr. Fulton, "and I can see a great future for the mohair industry. Recently I visited the mohair mills in Massachusetts and in Maine and I found that they were importing great quantities of mohair which we might be raising in this country. Probably there are more goats in Texas than there are in any other State in the Union, but every goat man knows that the Baileys are the largest individual breeders in the world and their stock is recognized as the best in the United States. Texas was having an unprecedented drouth when I was there a few weeks since, and the goat men were the only ones with smiles on their faces. The cattle were dying everywhere, but the goats were living on the brush." Mr. Bailey said that Mr. Fulton had visited nearly all of the goat country in America before he closed this trade, and his initial purchase will contain some good California stock.

### SANTA CRUZ.

**APPLE CROP PROSPECTS.**—Pajaronian: We have interviewed several orchardists this week about apple crop prospects, and, while their reports on Newtowns differ, but few claim a good crop of Bellefleurs. These reports indicate a fair crop of Newtowns and a light crop of Bellefleurs. The falling off in crop is attributed to rains in April during the blossom period. A few orchardists say that there is always a claim of apple crop shortage about the middle of May; that it is too early to figure on the crop; that the foliage hides many of the small, young apples, and that even if we have a "June drop" there will be found a good crop of Newtowns and Bellefleurs in July.

**BLACKBERRIES BLIGHTED.**—Reports are coming in that the blackberry crop is going to be blight—that in some way it has been blighted, probably owing to the low early morning temperature during last week.

### SHASTA.

**A CHICKEN FREAK.**—Searchlight: Joe McCabe has a freak chicken which was hatched in an incubator and has three well defined legs and feet. The extra leg is where the tail in an ordinary chicken is found. It is a genuine leg with four toes. For a tail this chicken has a regular rabbit's tail, consisting of a small tuft of fur about 2 inches long located just over the spot from whence the third leg protrudes. The chicken is lively and shows every indication of living to maturity.

### SOLANO.

**SORGHUM FOR FOOD.**—Dixon Tribune: Our local stockmen who are seeking some growth that will afford green feed the year around would do well to investigate the merits of sorghum. H. A. Ross has been experimenting with sorghum and gives it a very strong recommendation. Mr. Ross had several acres of the growth this year and it afforded excellent feed and kept green until the frosts came. It may be sowed broadcast or drilled in and it requires little or no attention. It is claimed by those who have used it that there is nothing better to produce milk and beef cattle will fatten rapidly on it.

### SUTTER.

**SULPHUR FOR RED SPIDER.**—Sutter County Farmer: Last season the red spider was very thick in this locality, especially on the almond trees, and growers should examine their orchards carefully and be prepared to sulphur well at the proper time to eradicate this pest. Owing to the cool spring with frequent showers, some think that the spider will not be much in evidence this season, but it is too early to put much confidence in this theory. Several growers have had large blowers constructed to spread the sulphur over the trees and by this method the orchard is soon treated.

**ALMONDS IN DEMAND.**—Sutter Independent: The local almond growers are jubilant over the prospect of big prices for almonds the coming season. On Monday a firm from the city purchased the O'Connor crop in Chico and paid 10½ cents. The local growers are holding for 11 cents and expect to get this figure.

### TEHAMA.

**A LABOR SAVER.**—Red Bluff News: Street Commissioner H. A. Patterson has for some time been figuring on a plan to facilitate the moving of earth, gravel, crushed rock, etc., and he now has decided on an invention which he thinks will be practical and a great labor saver. He is working on a model to test his idea. His plan is to use a two-horse scraper to scrape the dirt or gravel onto a platform which the horses will raise as they walk away, after the load is dumped, by simply hooking a rope to the singletrees. The platform with its deposit of earth will be raised to a height of about 5 feet and under it a wagon will be driven. The driver, by simply pulling a trigger, will cause the platform to drop at an angle, when the dirt will slide from it into the wagon below.

**AVOID MULE HEELS.**—William Wallin, while unharnessing some mules at the Cone ranch Wednesday evening, was kicked by one of them, the blow striking him in the forehead. A gash over 2 inches in length, in shape of a semi-circle, was made which penetrated to the skull, but the skull was not fractured.

### TULARE.

**BUTTER IN DEMAND AT ADVANCING PRICES.**—Register: The Tulare butter factory is now making 375 rolls, or 750 pounds of butter each day, and not only has a good market for all the butter made, but has in a single order for 10,000 pounds. Two new separators have been ordered and the company is planning to put in electric power. The price for butter ruled low during most of May, but orders for June butter are being received at better prices, and it is anticipated that prices will be better still.

**PEAR BLIGHT.**—H. C. Hartley of Visalia reports that he does not expect to get 100 pounds of pears from his trees this season owing to the pear blight.

### YOLO.

**THE FIRST APRICOTS.**—Winters Express: The first crates of apricots sent from Winters this year were shipped to Chicago on the 21st from John Stickland's orchard. These are the first 'cots sent out of the State this season—eleven days later than last year. A year ago the 21st a carload was shipped from Winters.

**WILL PLANT BROOMCORN.**—Democrat: George Peart, of Knights Landing, and Walter Ackers, formerly of Yolo, have each leased 130 acres in the Hayes & Garoutte tract and will plant it to broomcorn. A part of the land is still covered with water, but it will soon be clear of it. This is about the proper time to plant broomcorn, but good crops are often harvested when the land is seeded in June.



## THE HOME CIRCLE.

## Tell Him So.

If you have a word of cheer  
That may light the pathway drear  
Of a brother pilgrim here,  
Let him know.

Show him you appreciate  
What he does, and do not wait  
Till the heavy hand of Fate  
Lays him low.

If your heart contains a thought  
That will brighter make his lot,  
Then, in mercy, hide it not;  
Tell him so.

Bide not till the end of all  
Carries him beyond recall,  
When beside his sable pall,  
To avow  
Your affection and acclaim  
To do honor to his name,  
And to place the wreath of fame  
On his brow.

Rather speak to him to-day,  
For the things you have to say  
May assist him on his way;  
Tell him now.

Life is hard enough at best,  
But the love that is expressed  
Makes it seem a pathway blest  
To our feet;

And the troubles that we share  
Seem the easier to bear,  
Smile upon your neighbor's care  
As you greet.

Rough and stony are our ways,  
Dark and dreary are our days;  
But another's love and praise  
Make them sweet.

Wait not till your friend is dead  
Ere your compliments are said,  
For the spirit that has fled,  
If it know,  
Does not need to speed it on  
Our poor praise; where it has gone  
Love's eternal golden dawn  
Is aglow.

But unto our brother here  
That poor praise is very dear,  
If you've any word of cheer,  
Tell him so.

—J. A. Edgerton.

## Clouds.

The whole scene was drear and desolate, and a pale face pressed against the window pane looked out upon it with sorrowful eyes, seeing in the gloom of the landscape and shadowy skies the symbol of her future life. The face itself was not remarkable; there was not special beauty of outline, no dazzling complexion, no soft-colored, wavy hair. It was white and slender, and would have been spiritless only for the restless eyes and blood-red lips. The forehead was thought-impressed with brown hair brushed back and closely braided from the face, which happiness might have beautified, but which was now undeniably plain and tinged with the cold gray hue which pervaded earth, air and sky.

Annie Raymond stood for an hour looking persistently out, not on the dreary landscape alone, but into her drearier future. Since her mother's death, which occurred during her childhood, she had experienced no bitter trials; but little, trifling troubles had made her daily life unlovely and unpleasant.

The family was large and in very moderate circumstances, and, like all poor people of the present day, struggling to make one dollar show for two, and so appear richer than they really are.

Jane, the eldest sister, took charge of the house and ruled the younger children with a rod of iron. The two girls who came next were both married and struggling with large families and poverty. A brother next younger had left home and was seeking his fortune—a hopeless task. Then came Annie, age twenty-one, and then came sisters younger still. The father was a grave, hard-working man, who usually dozed away the time he spent at home.

Annie's life had been monotonous enough thus far. There was housework in the mornings, and in the afternoons the sisters sewed for a furnishing store in the village, barely earning a sufficient sum to clothe them in the plainest apparel.

But they were sprightly, intelligent girls, and were received in the society

of the village upon an equal footing with those who were better supplied with the world's goods.

There had been a time when Annie indulged in rosy dreams of the future, but her life was too monotonous, so lacking in incident, these were soon dispelled. Her older sisters furnished striking examples of what her own life would be.

Should she choose single-blessedness and become a cross, unhappy old maid like Jane? Or follow in the footsteps of Sarah and Sue, and be a sickly, task-burdened wife, with scarcely an hour's peace and quiet.

Neither picture looked inviting to a young girl who had a passionate longing for the luxurious and beautiful things of this life. So she grew graver as she went about the same simple, homely tasks day after day, and Jane's reproving voice grated more and more harshly upon her sensitive ear, until it seemed as if she must cry out like a hurt child under the pain of her life burden, and she was only dumb for very shame.

For her sisters seemed happy in a certain degree, and was her life harder to bear than theirs?

"They never think," she said; "I do; so much the worse for me; but I cannot make them understand how terribly a life like theirs seems to me; it is so utterly devoid of beauty, and even comfort."

But during the previous winter a change came over the spirit of her dreams. George Hastings came to Glenville, and from her first acquaintance with him her life brightened. He was only a merchant's clerk, but capable and energetic, and a favorite with his employer.

When Annie met him first she only saw a rather small and uninteresting-looking young man, who conversed agreeably. When she saw him for the second time she thought he had fine eyes, and before the evening was over she confessed that his smile was beautiful. Then, as their acquaintance progressed, she found their tastes were very similar in many things.

After this he often called upon her evenings and read aloud to her while she was busy with her sewing. Numberless little attentions followed, rendered in a tender delicate way, and for a time was supremely happy.

George was slowly but surely approaching a declaration—she was certain of this—and as she thought it over in her mind, doubts began to creep in where contentment had reigned.

She loved him so well, she could have died for him, and without him life would be utterly desolate. But he was very poor, with only a small sum as yet laid aside for a rainy day. Would her life, after all her tender dreams, be different from Sue's or Sarah's if she married him?

Jane, seeming to understand Annie's dilemma, lectured long and eloquently on the subject of marriage.

George Hastings was a fine young man, he told Annie, who would make his mark in the world yet, if he wasn't such a fool as to marry and burden himself with a wife. A wife was a fearful drag to any man. Single life for either man or woman was the only true and noble life to lead, and any woman who married because she was tired of taking care of herself, was a moral coward.

So pondering upon Jane's words until she was nearly demented, Annie stood looking out upon the clouded skies in the chill November afternoon, and thinking desolately of the clouds hovering over her sky-life.

"Will it be always so?" she asked herself bitterly, as she turned away. "Oh, I am so tired of the clouds of sorrow. Will the sunshine of joy never come?"

At this moment one of her younger sisters came in with a letter for Annie. In some surprise—for it bore a city postmark—she opened it.

With the early heat of summer a lady had come to board at Glenville, in search of country fare and country breezes, for she was a confirmed invalid. She took lodgings across the way from Mr. Raymond's and seemed to

fancy Annie from the first. She now wrote asking Annie to come and live with her, as nurse and companion and offering a sum which seemed princely in Annie's eyes.

She decided at once to go, for she longed for a glimpse of the world without, but she would wait until she saw George in the evening, for his opinion might influence her in some degree.

So when he came, she hastened to impart the news.

"Don't go, Annie," he urged. "You know—you must have known for a long time—that I love you dearly. I've only waited to tell you because I had not a suitable home to offer you as yet. But I'm saving for that purpose every day, dear, and when we can see each other so often it will not be so hard to wait a little longer. Stay, and promise me you will be my wife just as soon as I can provide for you properly."

"George," she said, "you know I love you, but I am too much of a coward to bind myself to be a life-long slave, like my sister, Sarah, for instance."

"Sarah was sickly before she married, I believe," he answered quietly, though his manner betrayed some surprise at such an outburst from the usually mild Annie.

"Yes," reluctantly.

"And peevish and fretful, too."

"Yes," responded Annie, slowly.

"You are neither."

Annie burst into tears.

"She was unhappy," she said, "and so am I."

George was puzzled. He used his powers of persuasion to the utmost, but she was inexorable. She would not consent to an engagement, and she would go to the city as a companion to Mrs. Reade. So vexed with her obstinacy, but thinking it best to give her her own way, since he could not well do otherwise, he bade her goodbye.

Annie sobbed herself to sleep that night, and two days after—for there was but slight preparation needed—she set out for the city.

For a time she was delighted with her situation. Mrs. Reade was very captivating in manner, and treated Annie almost like a sister. Annie had intended to save her earnings, but under Mrs. Reade's advice she found ample opportunity to invest them in the purchase of better clothing than she had ever worn before.

Bye and bye her situation became less pleasant. Mrs. Reade was very capricious, and sometimes hard to please. Another truth dawned upon Annie's mind about this time. Her mistress was a neglected unloved wife, and, though she had everything that wealth could procure, she was very unhappy, as much as either Sue or Sarah.

"Oh, dear!" Annie sobbed to herself one day, when her patience was severely tried, "every one has more or less trouble, and, after all, poverty isn't the hardest thing in the world to bear. If I were at home now I could marry George and be contented with the inevitable outfit of six silver spoons and two feather beds, and feel much happier than either of my sisters."

However, she determined to remain as long as she could bear with Mrs. Reade's unhappy temper and the unpleasant familiarity of the servants, thinking she would at least save her money and have something to begin life with if she did marry, which seemed very doubtful to her now.

Spring came on, and as the weather grew warmer Annie began to have fearful headaches, a new thing for her. She grew tired of the senseless looking rows of brick and brown-stone and longed for the pleasant woods near her home, with their fresh, green leaves and early flowers. She felt if she could only have Jane to scold her it would do her good. She grew homesick for the very home she had despised. Mrs. Reade complained that she was growing heedless and Annie knew it was very true.

One morning she awoke feeling too ill to arise. Mrs. Reade's bell rang repeatedly, but Annie was too ill to heed it and lay dimly conscious of what

was passing around her. She knew they were holding a consultation over her, and afterwards they were removing her to some other place, she was too sick to care where.

After a few days of burning fever her senses returned, and she found herself in the hospital, with everything new and strange about her. As soon as she was able to sit up she procured writing materials of her nurse and wrote home.

By this time Mrs. Reade had aroused herself to write also, and, thoroughly alarmed, Jane set out to find her, accompanied by George Hastings.

George met Annie quietly, but Jane scolded and cried over her until Annie felt that her sister really cared more for her than she had ever known. They took her home, a shadow of her former self, but more contented in mind than she had been in years before.

But it was not until she was quite as well as ever, and had fallen readily into the old routine of daily labor that George spoke again of love. He came to see her the same as before, and brought her trifles in the way of flowers and books; and one evening, when they were sitting in the dusk and gloom of the twilight, with the cloudy November skies frowning without, George said:

"Do you think, Annie, you could marry a poor man after all?"

"Oh, George!" deprecatingly.

"And do you think you are brave enough to bind yourself to be a life-long slave like your sister Sarah?"

"Not to a husband I did not love, and who cared but little for me. That would be a fearful bondage for me, or to any other woman."

"But I love you and you love me. Don't you think that makes a great difference?"

"All the difference in the world, George."

"Then do you not think you could make up your mind to marry me?"

"I think I could if you asked me."

"Oh!" with a laugh, and that was all.

Not a word was spoken by either for some time, but he took her hand and drew her silently to his side. At last he spoke:

"Confess, Annie," he said, "that you are disappointed. I am not the hero you expect as a husband, am I?"

"No," she answered, "but you are a true, noble-hearted man, and that is better. I forgot, in all my senseless day dreams and plans for the future, that I was only a woman, and a very foolish one at that. You have excellent judgment and sense, but you are just my age, and, not so wise, I am afraid of you. I know you have faults, but so have I; and if you will have patience with mine, I can bear yours without a word."

"We shall have trials, too, dear," he said, "but we shall help each other endure them, and that will make them so much easier to bear. The lesson of the past year has not harmed you, Annie; you will be more contented all your life for it."

"It may have done me good, George; but I don't think that I'm one whit better than I was a year ago. I have the same faults still."

"Neither am I better than I was then, Annie; but I think we understand each other more fully, and I love you, faults and all, as I never could love another."

So at Christmas time they were married. And the finery in which Annie had indulged the winter before with slight remodeling, served a good purpose as a wedding trousseau. Her father came forward with the spoons and feather beds, and Jane exerted herself wonderfully, saying it was a pleasure to help Annie, she was so grateful for everything.

The little sum which Annie had saved from her earnings helped to furnish the pretty little cottage, which George's increased salary enabled him to rent; and though everything about it was very plain, it was neat and tasteful and homelike, and George and Annie were happier in it than many a pair, who have all that money can buy, could ever dream of being. And busy with



her daily cares which love lightened, Annie forgot to mourn over clouded skies.—New York News.

### Benefits of a Frequent Change.

The doctor looked at his young patient with rather a dissatisfied air. "Why do you not get well?" he asked her, somewhat impatiently. "Your fever left you long ago, and you have no organic trouble, and yet you stay just in the same state day after day. You will hurt my reputation if you keep on in this way," he added jokingly; but on leaving the room he spoke more seriously. "She must be roused in some way," he said to her mother and the trained nurse who was in attendance. "What she really needs is a change, but she is too weak in her present condition to travel. I am going to try an experiment which will do no harm and may do good. I want you to let me have another bedroom for her, and arrange it quite differently from the way it is now—a room with a fireplace, if possible. Light a bright little wood fire and buy her a pretty new dressing-gown. We will give her a radical change in her own house, and see what that will do."

A couple of days afterwards the girl was told that she was so much better that she was going to be moved into another room, and, despite her reluctance, the change was made. The next day she showed languid pleasure at her pretty and novel surroundings, her diet was altered, and she gradually acquired an appetite. In a pretty new dressing jacket she received the compliments of the doctor and nurse with complacency, and from that time on began to convalesce rapidly. "All going to prove," said the doctor, "that absolute change is often an essential toward recovery, and that the required stimulus may be given, if necessary, at home."

Even to those who are in health the benefits of a home change should not be underrated. "I like to get a new cook, because it is the only way we get different food," said a young married woman; but the more experienced housekeeper appreciates the imperative hygienic value of change, and varies the family diet accordingly. Every woman has experienced the mental and even moral stimulus of new gown (always provided it has been paid for), but not every one recognizes that it is the same with domiciliary surroundings, and that to occasionally make a different arrangement of furniture is a good thing, while small novelties in the way of new books and periodicals, a change of dress, and particularly the menu, all go to brighten the home atmosphere, and give a tired man the change he really requires.—N. Y. Tribune.

### Brain Keeps Time in Sleep.

"Speaking of the brain," said a well-known neurologist the other day, "one of the most striking peculiarities is that in the soundest sleep of which we are capable some part of the brain organism takes upon itself the duty of measuring time."

"You may sleep your soundest, sweetest sleep and be awakened suddenly out of it. Almost your first mental prompting is that of time; there is an involuntary attempt on the part of the brain to tell you just how long you have been asleep. You will get some idea of the time, too; you can make a pretty intelligent guess as to whether it is nearer twelve o'clock than it is to three o'clock."

"But when one has lost consciousness, whether through violence or ether or fainting, there is absolutely no knowledge of time. A man coming from under the influence of ether does not know whether he has been unconscious an hour or a month. He has no sensation that will suggest it."

"In sleep, however, it seems as if the brain's time card can be thrown off completely. For instance, a person, unexpectedly, may go to sleep on a warm summer day. It is morning, we will say, and the sun is shining. When he awakes the sun is still shining, and most frequently, unless sleeping in day-

light is common to him, he will have no idea whether the next meal will be a late breakfast, a luncheon, or a dinner; he has lost his bearings completely."

"Another faculty of the brain in time-keeping is that in many individuals it is possible for them to go to sleep and awaken at almost any hour they may decide upon. In some persons this ability to awaken at pleasure is almost marvelous. As this brain timekeeper works in man, unconsciously, all through the day, we may well wonder how and when it gets its period of rest."

### Some Facts About the Eyes.

Eyes of any color with weak brows and long, concave lashes are indicative of a weak constitution.

People of melancholic temperament rarely have clear blue eyes.

The chameleon is almost the only reptile provided with an eyelid.

Eyes with long, sharp corners indicate great discernment and penetration.

Homer attributed a protruding eye to Juno. He called her the ox-eyed Juno.

The utility of shedding tears is to keep the eyes cool, though the balance of the head may be hot.

The iris of the eye is rarely of one color, but commonly mottled with black, blue, orange, yellow, gray or all combined.

It seldom happens that both eyes are exactly alike. An examination with a magnifying glass usually discovers many differences between the two.

A red object is not nearly so visible at a distance as one of white. A red globe a foot in diameter can be perceived clearly only at a distance of 8000 feet, and a blue glass a little farther.

It is said that the prevailing colors of eyes among patients of lunatic asylums are brown or black.

Brown eyes are said by oculists to be the strongest.

The eyes should not be used in weakness or sickness.

Unsteady eyes, rapidly jerking from side to side, are frequently indicative of an unsettled mind.

The ostrich is believed to see objects behind him as well as those in front. Persons standing directly behind an ostrich can see the pupils of his eyes and are thus easily seen by the bird.—Philadelphia Record.

### Do Ants Have Horses Too?

Not long ago a French explorer, M. Charles Meissen, in traveling through Siam observed a species of small gray ants which were new to him. To his surprise he noticed among them from time to time an occasional ant which was much larger than the others and moved at a much swifter pace, and each of these larger ants, M. Meissen saw, always carried one of the gray ants on its back. This discovery led him to watch their movements closely. He soon saw that while the main body of gray ants was always on foot, they were accompanied by at least one of their own sort mounted on one of these larger ants. He mounted and detached himself now and then from the line, rode rapidly to the head, came swiftly back to the rear, and seemed to be in command of the expedition.—Little Chronicle.

### Have You Seen My Sheep?

The players form a circle. One player walks around the outside, and touching someone on the back, asks "Have you seen my sheep?" The one questioned answers "How was he dressed?" The dress of some player is then described, who, when he recognizes himself, must run around the outside of the circle and try to reach his own place before he is tagged by the questioner. If tagged, he is "it," and the questioner takes his place in the circle.—The American Boy.

When wool carpets are thin in places, put cotton cloth underneath (not too thickly) with flour paste, and iron down. Rag carpets can be mended in the same way when badly worn.

## DOMESTIC ECONOMY.

### Domestic Hints.

**BROILED SALT CODFISH.**—Soak the codfish in cold water to remove the salt; dry with a cloth, broil over a clear fire for ten or fifteen minutes. When cooked serve on a hot platter, with melted butter poured over.

**FUDGE.**—Two cups of granulated sugar, half a cup of milk, a piece of butter a little larger than an egg, a little salt and seven teaspoonfuls of cocoa. Boil twelve minutes. Add three teaspoons of vanilla, and stir for three minutes. Remove from the fire. Pour, caramel thickness, into buttered tins. When partially cold, mark off in squares.

**MEAT SOUFFLE.**—Make one cup of cream sauce, and season with chopped parsley and onion juice. Stir one cup of chopped meat into the sauce. When hot add the beaten yolks of two eggs, cook one minute, and set away to cool. When cool stir in the whites of the eggs, stiffly beaten. Bake in a buttered dish about twenty minutes and serve immediately.

**LADY LOCKS.**—Cut puff or other rich pastry rolled into a thin sheet into strips about three-fourths inch wide. Wind this round and round upon lady lock sticks, keeping the space between the paste quite narrow. Dispose on a baking sheet, and bake in a moderate oven. Remove the pastry from the sticks and fill the hollow centres with heavy cream, sweetened and flavored before whipping.

**ENGLISH SCONES.**—One pound of flour, one-quarter of a pound of butter, half a cupful of sugar, two teaspoonfuls of baking powder (if self-raising flour is used leave the baking powder out), one-half teaspoonful of salt, one cupful of currants, one egg and enough milk to mix to a dough. Rub the flour and butter together until there are no lumps, then add all the other dry ingredients. Be sure that the currants have been thoroughly cleaned. Beat the egg until light, then stir it into the mixture. Add enough milk to form a dough as for tea biscuits. Roll or pat it quickly until a little less than an inch thick, and cut into any desired shapes. Scones are usually made the size of a coffee saucer. Bake in a quick oven until done. Split each scone as soon as done, and butter it, put it together again and serve hot.

**CHOCOLATE BREAD PUDDING.**—Two squares of chocolate (or two heaping tablespoonfuls of cocoa), four cupfuls of milk, two cupfuls of breadcrumbs, one-third of a teaspoon of powdered cinnamon, three-quarters of a cupful of sugar and a pinch of salt. Put one cupful of milk in a double boiler, and as soon as it is scalding hot stir in the chocolate. When this has dissolved add the remainder of the milk, and when it begins to simmer pour it over the breadcrumbs. Let the mixture stand for twenty minutes. Beat the eggs until light, then add sugar and salt and beat again, and stir into the bread mixture. Pour the whole into a buttered pudding dish and bake for three-quarters of an hour. This

pudding may be served hot or cold, but is usually served hot, with a sauce made of one pint of cream whipped, to which has been added one-quarter of a pound of butter, one cupful of powdered sugar and vanilla to flavor. The last two ingredients should be beaten together until light, then the cream gradually beaten in, and the whole put in a double boiler and stirred vigorously for three minutes before serving. If the pudding is served cold, a sauce of sweetened whipped cream flavored with vanilla may be used.

**VEAL CAKE.**—Take some nice thin slices of veal, and season them with salt, pepper and nutmeg, grated; have ready some hard-boiled eggs, sliced, and put a layer of these at bottom of a basin or pan, then a layer of veal, then some slices of ham; over this strew marjoram, thyme, parsley, shred fine; breadcrumbs and lemon peel chopped small; then a layer of eggs, veal, ham, etc., and so continue till the pan is filled; pour some good gravy over the whole, cover the pan with coarse brown paper, tie it closely over and set it to bake in a slow oven; an hour will be sufficient to bake it; when cool, turn it out upon a dish, and serve; garnish with parsley.

### Hints to Housekeepers.

The wool bed blankets can be adjusted to tennis flannel of light weight, stitched a few times to hold in place; or two blankets may be put together and fastened in the same way.

To mend holes in rag carpet, cut away the worn rags and warp; then run cotton yarn the color of the warp, back and forth, to supply the missing threads, attaching them to the loose threads of the warp on either side. With rags like the color of the stripe, weave under and over the threads to fill the space, then smooth with a warm iron.

Make any kind of a sherbet and half freeze it and you have a simple sorbet. Generally, however, wine, rum or some kind of cordial is added when the mixture is frozen. Serve in glasses before or after the roast. The sorbet should be frozen only twelve or fifteen minutes. The finest kinds of sorbets are those made with the juice of several kinds of fruit. Here is a good rule: Boil together for twenty minutes one pint of sugar, one quart of water and one pint of chopped pineapple. Add to this preparation one gill of lemon juice and a half pint of orange juice; when cold strain and freeze.

At a recent dinner the name cards were envelopes bearing the hostess' monogram on the back, and a pen-and-ink sketch of a pretty girl on the face. Slips of paper inside bore the date and appropriate quotations. Flowers colored with water colors and cut out of water-color paper are pretty name cards for a spring dinner. Ribbons are again in favor for table decorations, but the most refined way seems to be to have only washable things on the table, exquisitely white linens or damask, silver, cut glass, and ferns and flowers. Silver dishes are almost exclusively used in serving, and you are fortunate in owning some old Sheffield vegetable dishes and cake baskets. Bread is served in cake baskets.

Chicken souffle by the following rule is very excellent, says a writer in "What to Eat." Melt a rounding tablespoonful of butter, add an equal quantity of flour and gradually two cups of milk. Stir until smooth, add half a cup of breadcrumbs, two cups finely chopped cold cooked chicken and salt, pepper, chopped parsley and onion juice to taste. Take from the fire, add the well-beaten yolks of three eggs, rub a little butter over the top, so it will not form a crust, and set aside until it is time to bake it, then fold in the stiffly-beaten whites of eggs. Turn into a buttered pudding dish and bake thirty-five minutes in a slow oven. Serve immediately after it comes from the oven or, like all souffles, it is very apt to fall. The same mixture may be baked in paper boxes or ramequin dishes, and served as an entree.

The lamp with  
wrong chimney is  
like a letter without  
a stamp: Don't  
go.

MACBETH

My name on every one.

If you'll send your address, I'll send you the Index to Lamps and their Chimneys, and tell you what number to get for your lamp.

MACBETH, Pittsburgh.



## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, May 28, 1902

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July.	Sept.
Wednesday.....	75% @ 74 1/4	74% @ 73 1/4
Thursday.....	73% @ 74 1/4	72% @ 73 1/4
Friday.....	74 1/4 @ 73 1/4	73% @ 72 1/2
Saturday.....	72% @ 73 1/4	72% @ 72 1/2
Monday.....	73% @ 73 1/4	72% @ 72 1/2
Tuesday.....	73% @ 74 1/4	72% @ 73 1/4

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday.....	35% @ 35	29% @ 29
Thursday.....	35% @ 35	29% @ 29 1/4
Friday.....	35% @ 35	29% @ 29
Saturday.....	34% @ 35	28% @ 29
Monday.....	35% @ 35	29% @ 29
Tuesday.....	— @ —	— @ —

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	— @ —	1 11% @ 12 1/4
Friday.....	— @ —	1 13% @ 12 1/4
Saturday.....	1 14% @ 1 14	1 12% @ 1 13 1/4
Monday.....	— @ —	1 13% @ 1 12 1/4
Tuesday.....	— @ —	1 12% @ 1 13 1/4
Wednesday.....	— @ —	— @ —

## WHEAT.

The local market has shown decided firmness most of the time since last review, but business has not been of large volume, owing to the fact that there has been very little wheat offering. For weeks past the local market has been very lightly stocked, and no special change in this respect is looked for until the new season is fairly opened. Nearly all of the recent chartering of ships for wheat cargo has been for new crop loading. Of the twelve ships now on the engaged list for wheat loading, four are for new crop. The ships to load last season's wheat, or whose lay days expire before new crop will be available, are probably mostly if not fully provided for out of stocks now in store at Port Costa. It is altogether likely that more ships would be now loading if the necessary grain was readily obtainable. Noteworthy in the wheat export trade at this date is the demand from South Africa. One ship departed the past week with 3,600 tons of wheat for the Boer section, and another is loading for same destination. This last vessel has a capacity of 3,000 tons, and her freight rate to Africa is 26s 9d. The latest reported spot charter for wheat cargo to Europe, usual option, was at 23s 9d for a French ship of 2,200 tons capacity.

California Milling..... 1 16 1/4 @ 1 20  
Cal. No. 1 shipping, alongside..... 1 13 1/4 @ 1 15  
Oregon Valley..... 1 13 1/4 @ 1 15  
Washington Blue Stem..... 1 15 @ 1 17 1/4  
Washington Club..... 1 12 1/4 @ 1 15  
Off qualities wheat..... 1 10 @ 1 12 1/4

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	6s 1 1/4 @ 6s 2d	6s 5 1/4 @ 6s 6d
Freight rates.....	36 1/4 @ 37 1/4s	23 1/4 @ 25s
Local market.....	97 1/4 @ 1 00	1 12 1/4 @ 1 16 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1902, delivery, \$1.15 @ 1.13 1/4.  
December, 1902, delivery, \$1.12 1/2 @ 1.13 1/4.  
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.12 1/2 @ 1.13 1/4; May, 1902, \$1.13 1/4.

## FLOUR.

Business is of fair volume, both for shipment and on local account. Values are being well maintained at the prevailing range, and are more apt to be stiffer than easier at the opening of the new season. While spot stocks are proving sufficient for immediate necessities, they are by no means heavy. Considerable flour is being forwarded to South Africa from Vancouver. Recent arrivals of flour in this center from outside sections have been light.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

## BARLEY.

Market has inclined against the buying interest during the greater part of the week under review, more especially for

feed descriptions, the business doing being principally in barley of this sort. Quotable values for brewing grades are little higher than for choice feed, but the figures for high grade stock are largely nominal for the time being, owing to the prevailing inactivity in the same. Should any noteworthy demand set in for brewing barley, higher figures than are now quotable would likely have to be paid.

Feed, No. 1 to choice.....	98% @ 1 00
Feed, fair to good.....	96% @ 97 1/4
Brewing, No. 1 to choice.....	1 01 1/4 @ 1 01 1/2
Chevalier, No. 1 to choice.....	1 10 @ 1 20
Chevalier, poor to fair.....	95 @ 1 05

## OATS.

There is not much activity to record locally in this cereal, but stocks are of rather small volume, and largely in few hands and are being in the main very steadily held. While the market is tolerably firm throughout, the firmness is most pronounced on desirable qualities of white oats, these being in lightest supply.

White Oats, fancy feed.....	1 45 @ 1 47 1/4
White, good to choice.....	1 40 @ 1 42 1/4
White, poor to fair.....	1 32 1/4 @ 1 35
Gray, common to choice.....	1 35 @ 1 45
Milling.....	1 42 1/4 @ 1 47 1/4
Surprise, good to choice.....	1 45 @ 1 50
Black Russian.....	1 20 @ 1 35
Red.....	1 27 1/4 @ 1 42 1/4

## CORN.

Values for this cereal continue at a high range. Local holdings are of limited proportions and are largely under speculative control. Although no great breaks in prices are anticipated for some time to come, not much corn will be required to satisfy the demand so long as prices remain at or close to existing levels.

Large White, good to choice.....	1 50 @ 1 55
Large Yellow.....	1 47 1/4 @ 1 52 1/4
Small Yellow.....	1 50 @ 1 55

## RYE.

No great quantities of this cereal now offering, neither is there inquiry worthy of special mention.

Good to choice.....	90 @ 95
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## BUCKWHEAT.

None arriving, but millers do not appear to be short of supplies. Quotations are based on latest reported transactions.

Good to choice.....	1 55 @ 1 70
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## BEANS.

There has been no special activity in beans of any description since last review. Aside from Whites and Pinks, local stocks are not of sufficiently large volume to admit of any noteworthy wholesale movement. The Whites and Pinks are largely in second hands and are being very steadily held, but to effect free sales marked concessions from full current figures would have to be granted buyers. Limas are not being offered freely, and the improved figures last quoted on same are being maintained in a jobbing way.

Pea, fair to good, 100 lbs.....	3 25 @ 3 50
Small White, good to choice.....	2 40 @ 2 50
Lady Washington.....	2 40 @ 2 55
Pinks.....	2 10 @ 2 20
Bayos, good to choice.....	3 00 @ 3 10
Reds.....	2 25 @ 2 50
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	3 65 @ 3 75
Black-eye Beans.....	4 50 @ 4 75
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

## DRIED PEAS.

Very little doing in this line. Spot stocks are fairly liberal, especially of southern product. Only for most select does the market show any firmness.

Green Peas, California.....	1 50 @ 2 00
Niles Peas.....	1 75 @ 1 80

## WOOL.

The market remains quiet in this center, but there is no special pressure to realize and no pronounced weakness is manifest. The European markets have been lately developing strength, and there is good reason for believing that desirable wools will be salable here before the close of the season at better prices than are now obtainable. Any noteworthy demand from Eastern manufacturers, and same is likely to be experienced before long, would speedily develop a firmer feeling.

## SPRING.

Northern Cal., free.....	15 @ 16 1/4
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	12 @ 15

## HOPS.

Market has exhibited no changes of consequence since last review. There is no wholesale trading in 1901 hops at present and nothing other than asking figures

of jobbers upon which to base quotations for same. Dealers are quoting 14 @ 17 1/4c. for last year's hops. They are bidding 12 1/4c. for choice new to arrive, but there are no evidences of growers being anxious to contract at this figure. It appears to them to be a rather one-sided proposition, as there is little or no probability of choice hops going for less than 12 1/4c. next fall, and they may command more money. The Eastern market is reported as follows through recent advices by mail: "Receipts have fallen to a very low point, which indicates that the crop is pretty well forward. Local stocks have been steadily reducing for the past two months and are now very moderate for the season of year. This is the real basis for the firmness that has been noted of late. During the week now closing the amount of business effected was rather small. The weather has been so cold as to materially affect the consumption of malt liquors, and brewers have made only occasional purchases. The strong statistical position has, however, made holders indifferent about selling except at full rates; indeed, some are asking even higher prices than have yet been quoted. Such business as is doing is generally within range of 16 @ 19c., but a little more is occasionally realized on time sales to brewers. Early in the week there was freezing weather in the interior of this State and the vines were mostly cut down to the ground. It is expected that the roots will throw out new shoots, and that the damage may not be considerable, but it will probably make the crop two weeks late."

## HAY AND STRAW.

The market for hay shows much the same general tone as during preceding week, being in the main favorable to the buying interest, especially for other than most select qualities of wheat or mixed wheat and oat. Occasional sales of very select wheat hay are made at an advance on utmost figures warranted as a quotation. First cutting alfalfa and new crop volunteer oat are beginning to arrive in quotable quantity. Some new volunteer oat of very good quality went at \$9 per ton. Not much straw arriving, neither is the demand for it active.

Wheat, good to choice.....	9 00 @ 12 00
Wheat and Oat.....	9 00 @ 11 50
Oat, good to choice.....	8 00 @ 10 50
Barley.....	7 50 @ 9 00
Alfalfa.....	8 00 @ 10 50
Clover.....	7 00 @ 8 50
Compressed.....	9 00 @ 12 00
Straw, 3 bale.....	40 @ 50

## MILLSTUFFS.

There is not much mill feed of any description arriving from any quarter. Spot stocks are of small volume. Bran, Middlings and Shorts are held about as last quoted, with demand slow at full current figures. Rolled Barley and Milled Corn are commanding fully as stiff prices as have been ruling any time the current month.

Bran, 3 ton.....	17 50 @ 18 50
Middlings.....	20 00 @ 22 50
Shorts, Oregon.....	18 00 @ 20 00
Barley, Rolled.....	21 00 @ 22 00
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

## SEEDS.

In the various seeds quoted herewith there is so little doing at present that values for most kinds are wholly nominal. Mustard is in very light stock. Transactions in Bird Seed are mainly of a light jobbing character.

	Per ctt.
Flax.....	2 25 @ 2 50
Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 50 @ 2 65
	Per lb.
Canary.....	3 1/4 @ 3 1/2
Rape.....	3 1/4 @ 3 1/2
Hemp.....	3 1/4 @ 3 1/2

## BAGS AND BAGGING.

The Grain Bag market is quiet and is likely to so continue for a few weeks to come or until harvesters begin active operations. In quotations there are no great changes to record, but if pressure to realize was exerted at this date, concessions to buyers would have to be granted. In other descriptions of bags and bagging there is nothing of consequence doing. Considerable business in Fruit Sacks is looked for in the near future.

Calcutta Grain Bags, buyer June-July.....	5 1/4 @ 6
Calcutta Grain Bags, spot.....	5 1/4 @ 6
San Francisco Grain Bags, 22x36, spot.....	5 1/4 @ —
San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	8 1/4 @ —
Gunnies.....	— @ —
Bean Bags.....	5 1/4 @ 5 1/2
Fruit Sacks, cotton, three sizes.....	5 1/4, 6, 6 1/2
Fruit Sacks, Jute.....	7 @ 7 1/2

## HIDES, PELTS AND TALLOW.

The hide market is in fairly good shape for thoroughly sound stock, such being in request at full current figures, but some

of the latest arrivals are still more or less grubby, and for this description the demand is slow at low values. Pelt market is without quotable change, but movement is slow, as is natural when the wool market is quiet. Tallow is not lacking for custom, good qualities readily commanding full figures.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10 1/4 @ —	8 1/4 @ —
Medium Steers, 48 to 56 lbs.....	9 1/4 @ —	8 @ —
Light Steers, under 48 lbs.....	8 1/4 @ —	7 1/4 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	7 1/4 @ —
Light Cow Hides, under 50 lbs.....	8 1/4 @ —	7 1/4 @ —
Stags.....	8 1/4 @ —	7 @ —
Wet Salted Kip.....	8 @ —	7 @ —
Wet Salted Veal.....	9 @ —	8 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ —	14 @ —
Dry Kip and Veal, 11 to 16 lbs.....	14 @ —	12 @ —
Dry Calf, under 4 lbs.....	17 @ —	15 @ —
Salted Horse Hides, large.....	2 75 @ —	— @ —
Salted Horse Hides, medium.....	2 25 @ —	2 50 @ —
Salted Horse Hides, small.....	1 25 @ —	— @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, medium.....	1 50 @ —	— @ —
Dry Horse Hides, small.....	1 00 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 3 skin.....	80 @ 1 20	— @ —
Pelts, medium, 3 skin.....	50 @ 75	— @ —
Pelts, short wool, 3 skin.....	30 @ 50	— @ —
Pelts, shearling, 3 skin.....	15 @ 30	— @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good medium.....	— @ 30	— @ —
Deer Skins, thin winter.....	— @ 20	— @ —
Elk Hides.....	10 @ 12	— @ —
Tallow, good quality.....	5 1/4 @ —	— @ —
Tallow, No. 2.....	4 1/4 @ —	4 1/2 @ —
Goat Skins, perfect.....	30 @ 37 1/2	— @ —
Goat Skins, small.....	10 @ 20	— @ —
Kid Skins.....	5 @ 10	— @ —

## HONEY.

New crop is beginning to put in an appearance, but is not arriving in as heavy quantities as buyers anticipated. There is an absence of firmness, largely the result of the preconceived views of buyers, as the amount of honey now on market or being offered to arrive is not of such proportions as to warrant any pronounced weakness in tone or marked depression in prices.

Extracted, White Liquid.....	6 @ —
Extracted, Light Amber.....	4 1/4 @ —
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	10 @ 12
Amber Comb.....	7 @ 10
Dark Comb.....	6 @ 7

## BEESWAX.

Stocks are of small volume, with the demand fairly active and full current figures readily obtainable.

Good to choice, light, 3 lb.....	27 @ 29
Dark.....	25 @ 26

## LIVE STOCK AND MEATS.

Market for Beef is not showing much activity, but offerings are not of particularly heavy volume and values are being maintained at previously quoted range. Mutton is offering in sufficient quantity for immediate needs and market is barely steady, especially for ewes and old wethers. Current values on Lamb were fairly well maintained. Choice small Veal met with a moderately firm market. Hogs were in fair receipt and prices wavered slightly in favor of packers, the demand being slow at extreme current rates.

Beef, first quality, dressed, net 3 lb.....	7 @ 7 1/4
Beef, second quality.....	7 @ —
Beef, third quality.....	6 1/4 @ —
Mutton—ewes, 8 @ — c; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 125 to 200 lbs.....	6 1/4 @ 6 3/4
Hogs, small, fat.....	6 1/4 @ 6 1/2
Hogs, large, hard, over 200 lbs.....	6 1/4 @ 6 1/2
Hogs, soft or corn fed.....	5 1/4 @ —
Hogs, country dressed.....	7 1/4 @ 8
Veal, small, 3 lb.....	8 @ 9 1/4
Veal, large, 3 lb.....	7 @ 8 1/4
Lamb, spring, 3 lb.....	9 1/4 @ 10

## POULTRY.

The market has shown little variation in the matter of tone or prices since last review. Receipts of Eastern were rather light, and the amount of California poultry which arrived was of only moderate volume. All good to choice stock, young and old, was in fair request, bringing fully as good or slightly better prices than prevailed the preceding week. Common old and very small young did not meet with much attention, such selling slowly at comparatively low figures.

Turkeys, dressed, choice.....	— @ —
Turkeys, alive, Hens, 3 lb.....	13 @ 14
Turkeys, alive, Gobblers, 3 lb.....	13 @ 14
Hens, California, 3 dozen.....	4 00 @ 5 00
Roosters, old.....	4 25 @ 4 50
Roosters, young (full-grown).....	6 00 @ 6 00
Fryers.....	4 00 @ 5 00
Broilers, large.....	3 00 @ 3 50
Broilers, small to medium.....	1 75 @ 2 50
Ducks, old, 3 dozen.....	3 50 @ 4 00
Ducks, young, 3 dozen.....	4 50 @ 6 00
Geese, 3 pair.....	1 25 @ 1 50
Goslings, 3 pair.....	1 50 @ 1 75
Pigeons, old, 3 dozen.....	1 75 @ 2 00
Pigeons, young.....	1 50 @ 1 75
Hare, Belgian, large, 3 doz.....	4 50 @ 5 00



## BUTTER.

There have been some heavy packing orders lately on the market, mainly for Alaska, and these are about provided for, causing competition to be a little less active among buyers. Previous values are being quite well maintained, however, as receivers are placing stocks in cold storage rather than make any marked concessions.

Creamery, extras, # D.....	21	@—
Creamery, firsts.....	20	@—
Dairy, select.....	20	@—
Dairy, firsts.....	19	@—
Mixed store.....	17	@—

## CHEESE.

Market is well stocked with new California and for such is easy in tone. Choice old domestic is scarce, however, and Eastern is being offered sparingly, even at full current figures.

California, fancy flat, new.....	8 1/4 @ 9 1/4
California, good to choice old.....	— @—
California, fair to good.....	— @—
California, "Young Americas".....	8 1/4 @ 10

## EGGS.

Inquiry was not so active as earlier in the month, either for cold storage or immediate use, but there were no great accumulations of supplies. The tendency was to a little wider range of values than has been lately ruling, strictly fresh eggs of uniformly large size being held a little higher, while on ordinary offerings running irregular as to size and freshness, the market inclined somewhat in favor of buyers.

California, select, large, white and fresh.....	18 1/4 @ 19
California, select, irregular color & size.....	17 @ 18
California, good to choice store.....	16 @ 17

## VEGETABLES.

While there was no glut of desirable qualities of any variety, supplies of most kinds in season were of very fair proportions. Prices on new Onions did not vary much from the figures of preceding week. Peas were somewhat irregular in receipt and values fluctuated considerably in consequence, but averaged fully as good as previous week. String and Wax Beans showed increased supply, but quotations for same were not at a materially lower range. Rhubarb was in decreased receipt and higher. Tomatoes, Peppers and Egg Plant were not offered in heavy quantity.

Asparagus, # box.....	1 00 @ 2 50
Beans, String, # lb.....	6 @ 7
Beans, Wax, # lb.....	6 @ 8
Cabbage, choice garden, # 100 lbs.....	50 @ —
Cucumbers, # doz.....	40 @ 75
Egg Plant, # box.....	1 00 @ 1 25
Garlic, # lb.....	— @ —
Onions, Yellow Danver, # cental.....	— @ —
Onions, New Red, # cental.....	45 @ 60
Peas, Sweet garden, # lb.....	1 1/4 @ 2
Peas, good to choice, # sack.....	75 @ 1 25
Peppers, Green, # lb.....	8 @ 12 1/2
Rhubarb, # box.....	65 @ 1 25
Summer Squash, # box.....	75 @ 1 25
Tomatoes, # box.....	1 75 @ 2 25

## POTATOES.

There was a demoralized market for both old and new potatoes, but more particularly for old stock, at close of last week, under heavy offerings and a scare among buyers. Large accumulations of old potatoes from Vancouver caused the weakness. Some of these in poor order were sold down as low as 50c. per sack, and for the best at same date \$1.50 was an extreme quotation. There was a decided recovery, however, early the current week, both old and new selling to better advantage, owing to a marked falling off in receipts.

River Burhanks in sacks, # cental.....	1 00 @ 1 25
Petaluma and Tomales Burhanks.....	— @—
Oregon Burhanks, table.....	1 35 @ 1 60
Oregon Burhanks, seed.....	1 35 @ 1 50
River Reds.....	1 00 @ 1 25
New Potatoes.....	1 25 @ 1 75
Sweets, Merced, # cental.....	— @—

## The Fruit Market.

## FRESH FRUITS.

There were initial receipts Monday of Logan Berries from San Joaquin county, with reported sales of same at 12c. per small basket. Black Figs, the first of the season, put in an appearance the same day in small quantity from Arizona. Blackberries, Raspberries, Gooseberries and Currants made a better display, both as to quality and quantity, than preceding week, and prices were easier. Strawberries were in liberal receipt and cheap. Cherries arrived rather freely, mostly in bulk, and sold at a wide range of prices, as low as 2c. per pound and as high as 7c., as to variety and condition. There were a few Apricots from Arizona which went mainly at \$2.50@2.75 per crate.

Apples, # fancy, 4-tier box.....	2 25 @ 2 50
Apples, good to choice, # 50-lb. box.....	1 50 @ 2 00
Apples, common to fair, # 50-lb. box.....	1 00 @ 1 25
Cherries, Black, # box.....	50 @ 75
Cherries, White, # box.....	30 @ 50
Cherries, Black, in bulk, # lb.....	5 @ 7

Cherries, White, in bulk, # lb.....	3 @ 4
Blackberries, # crate.....	1 25 @ 1 50
Raspberries, # drawer.....	65 @ 1 00
Currants, # drawer.....	75 @ 1 00
Gooseberries, common, # drawer.....	20 @ 30
Gooseberries, English, # lb.....	6 @ 7
Strawberries, Longworth, # chest.....	5 00 @ 8 00
Strawberries, Melinda, # chest.....	4 00 @ 5 00

## DRIED FRUITS.

The market for evaporated and dried fruits remains practically the same as preceding week, and remarks given in last review apply to the market as fully at this date as they did a week ago. About the only new feature worthy of note is the arrival of a carload of Eastern evaporated Apples. Coming on a lightly stocked market, they will doubtless sell to good advantage. Stocks of California evaporated Apples probably do not exceed two carloads and these are in few hands. Of sun-dried Apples, there are so few offering as to be hardly deserving of a quotation. Future deliveries of new crop Eastern Apples are held more firmly than they were earlier in the month, 7c. being now the inside figure for prime New York, Oct.-Nov. delivery. In futures of California fruits of any description there is no evidence of anything of consequence doing. Some dealers are said to have shorted the market on new Royal Apricots at 6c. in sacks at primary points, July delivery. Buyers are talking 5c. for choice new crop Peaches in sacks at points of production, Aug. delivery. Efforts are being made to secure new crop Prunes for Oct. delivery on the 2 1/2 @ 2 3/4 basis for the four sizes, latter figure for Santa Claras. Stocks of last year's Prunes are nearly wiped out, and supplies of 1900 product are showing reduction at figures practically the same as have been lately ruling.

## EVAPORATED OR BLEACHED.

Apricots, Royal, choice, in sacks, # lb.....	9 @ 10
Apricots, Moorpark.....	10 @ 12
Apples, in 50-lb boxes, rings, pressed, fancy.....	11 @ 11 1/2
Apples, 50-lb boxes, rings, pressed, good to choice.....	10 @ 10 1/2
Nectarines, # lb.....	5 @ 6
Peaches, unpeeled, choice.....	6 1/2 @ 7 1/2
Peaches, peeled, in boxes.....	12 @ 14
Plums, Red and Black, pitted.....	5 @ 6
Plums, White and Yellow.....	5 @ 6
Prunes, 4 sizes, in bags, — @ — c; 50-60s, 4 1/2 @ 4 3/4 c; 60-70s, 4 @ 4 1/2 c; 70-80s, 3 1/2 @ 3 3/4 c; 80-90s, 3 @ — c; 90-100s, 2 1/2 @ — c; these figures for 1901 crop.	

## COMMON SUN-DRIED.

Apples, sliced.....	6 @ 6 1/2
Apples, quartered.....	6 @ —
Peaches, unpeeled.....	6 @ 6 1/2
Pears, prime halves.....	5 @ 5 1/2
Plums, unpitted, # lb.....	1 1/2 @ 2 1/2

## RAISINS.

It is understood that the packers and seeders' combine have disposed of all their 4-crown raisins, these not being desirable for seeding, and have withdrawn all their 2 and 3-crown from market, intending to run them through seeding machines. In quotable values there are no changes to note.

Following are the prices for 1901 crop in carload lots:

Loose Muscates—	Per lb.
4-crown.....	6 1/4 @ 6
3-crown.....	5 1/2 @ 6
2-crown.....	— @ —
Seedless Sultanas.....	— @ —
Thompson's Seedless, bleached.....	9 @ 9 1/2
Seeded—	
1-lb. carton.....	7 1/2 @ 8
12-oz. carton.....	6 1/4 @ 6 1/2
London Layers, 20-lb. boxes—	
2-crown.....	— @ —
3-crown.....	— @ —

## CITRUS FRUITS.

Orange market was moderately firm for choice to select, tolerably stiff prices prevailing for this advanced date. The Lemon market inclined against buyers for strictly select stock, but common qualities were plentiful and cheap. Limes were in fair supply and without quotable change.

Oranges—Navels, # box.....	1 50 @ 3 50
Mediterranean Sweet.....	1 50 @ 2 75
Valencias, # box.....	2 00 @ 3 50
Seedlings, # box.....	1 25 @ 2 25
Tangerine, quarter box.....	— @ —
Lemons—California, select, # box.....	2 50 @ 3 00
California, good to choice.....	1 75 @ 2 25
California, common to fair.....	1 00 @ 1 50
Grape Fruit, # box.....	75 @ 1 50
Limes—Mexican, # box.....	4 00 @ 4 50

## NUTS.

Spot stocks of Almonds and Walnuts are light, and the market is firm. Some sales of new crop Almonds of the Hatch varieties are reported at 10c., with 11c. generally asked. Large sales of new crop Walnuts are announced, the price to be determined later.

California Almonds, shelled.....	16 @ 19
California Almonds, paper shell, # lb.....	12 @ 13
California Almonds, soft shell.....	9 @ 10
California Almonds, hard shell.....	5 @ 6
Cal. White Walnuts, No. 1 soft shell.....	12 @ 13
Cal. White Walnuts, No. 2 soft shell.....	10 @ 11
Cal. White Walnuts, No. 1 hard shell.....	10 @ 11
Cal. White Walnuts, No. 2 hard shell.....	7 @ 8
Peanuts, California, fair to prime.....	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.....	5 1/2 @ 6
Pine Nuts.....	5 @ 6

## WINE.

The wholesale wine market is quiet and lacking in firmness. Some very good Northern dry wine of 1901 vintage is reported offering at 21c. per gallon, San Francisco delivery. The quotable range is nominally 20@25c. per gallon, but it would have to be a very superior article for which wholesale custom could be secured at present at extreme figure above noted. A bogus article is being offered here to dealers at a stated cost of 10c. per gallon. That this will be foisted on the public as wine, unless speedy means are taken to prevent it, is altogether probable. In fact, it is stated that this concoction is now being sold as wine in this market. The wine growers of the State should immediately appeal to the national and local authorities for the suppression of this fraud. The following is from a circular offering this bogus wine for sale:

"One gallon wine extract yields you 100 gallons blending wine, alcohol free. You have to take a barrel of 100 gallons capacity, put in 1 gallon wine extract and fill the barrel with regular water, shake the barrel well, and in a few minutes you will have a clear and bright wine that will never turn cloudy. You can be sure that the wine that you take to blend with our blending wine never gets cloudy, and you can bring up this wine to a grade of 6% alcohol, and it will be a steady, good quality of wine that never turns cloudy or sour. We charge you \$10 per gallon, so in this way the blending wine will cost you only 10c. per gallon. \* \* \* We conduct our business very discreetly, so that no person or firm in your line can find out that we have sold you some of our wine extract."

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## Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	127,175	6,041,014
Wheat, centals.....	215,978	9,686,948
Barley, centals.....	64,390	6,134,863
Oats, centals.....	1,935	776,641
Corn, centals.....	5,420	126,336
Rye, centals.....	140	270,271
Beans, sacks.....	3,850	698,429
Potatoes, sacks.....	25,610	1,330,109
Onions, sacks.....	5,319	196,503
Hay, tons.....	2,120	135,664
Wool, bales.....	1,421	70,160
Hops, bales.....	..	8,888

## EXPORTS BY SEA.

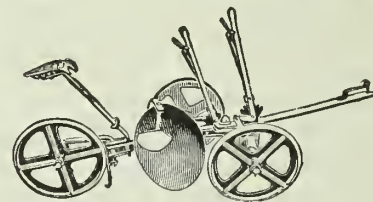
FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	97,008	4,100,574
Wheat, centals.....	206,666	8,971,361
Barley, centals.....	387	4,279,513
Oats, centals.....	1	3,817
Corn, centals.....	2,178	12,272
Beans, sacks.....	461	24,398
Hay, bales.....	..	19,334
Wool, pounds.....	..	1,241,854
Hops, pounds.....	1,839	554,046
Honey, cases.....	31	6,121
Potatoes, pack's.....	441	47,746

## California Dried Fruit at New York.

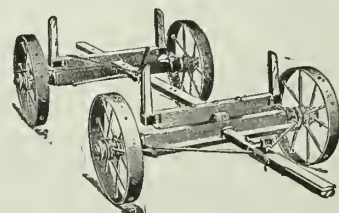
NEW YORK, May 28.—Evaporated apples, common, 7@9c; prime wire tray, 9 1/2 @ 9 3/4 c; choice, 10 @ 10 1/2 c; fancy, 10 1/2 @ 11c.

California Dried Fruits.—Offerings of last year's product are not heavy, and market is firm at the quotations.

Prunes, 3 1/2 @ 6 1/2 c.  
Apricots, boxed, 10 1/2 @ 14c; bags, 10 1/2 @ 12c.  
Peaches, unpeeled, 8 1/2 @ 11c; peeled, 14 @ 16c.



The new Benicia-Hancock disc plow put out during the past season proved to be an unqualified success. In view of past failures on the part of Eastern manufacturers, the Benicia Agricultural Works may feel proud of their product. More were sold than anticipated, for the public had begun to think that the disc did not make a good plow. It is safe to assert that no disc plow can be a success unless made under the Hancock patents, which have just been sustained in an injunction suit brought against an imitator. Baker & Hamilton have established agencies over the greater part of several States. Write them at San Francisco, Cal., for particulars.



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## THE CO-OPERATOR.

For a Broader Market.

To THE EDITOR:—In these days of trusts, combines and consolidations, of unions and trades councils, of State, national and international combinations, it is not remarkable that the co-operative movement among producers and consumers should feel the impulse toward unity for strength. California has long been the field of active co-operative effort in various lines, resulting in many more or less successful organizations. We have, for example, the associations of raisin growers, of fresh fruit growers, of walnut growers, of grain growers, etc. Each of these associations is to a greater or less extent co-operative for the purpose of marketing its peculiar line of product. On the other hand, California is distinguished by the number of co-operative associations formed for supplying their members with the necessary articles of every day use. This feature of co-operation is illustrated by the considerable number of stores organized on the profit-sharing plan. Some of these take the form of joint stock companies, in which the profits are divided among shareholders in proportion to the capital invested. The majority, organized on what is called the Rochdale plan, divide the profits among shareholders in proportion to their purchases.

It will be noticed that the associations of producers, whether of fruits, grain or other staples, are organized as sellers. The co-operative stores are organized as buyers and distributors. The common purpose of the two branches is to avoid the exactions of the middle man—the commission merchant, the jobber and the transportation companies. It has long been recognized that there is a community of interests between these two elements, and of late active efforts have been made for a closer union. With this end in view, an association was formed several years ago, under the name of the Pacific Coast Co-operative Union, which includes in its membership representatives of all the associations of the West, with few exceptions. This co-operative union has held several conventions during its existence, each assemblage resulting in a considerable advancement of their plans. The next convention of the union is to be held in Oakland next month, beginning June 24, lasting three days. At this convention there may occur the completion of a plan which, it is believed, will bring results of immense importance to California and the entire Pacific slope.

It may be remarked here that the associated producers have for disposal, in the aggregate, an immense amount of wares in the shape of grain, fruits, nuts, wool and other commodities. The co-operative stores, on the other hand, while numbering close to a hundred, and while handling a large amount of merchandise in the aggregate, yet offer a market for but a limited quantity of the goods which the associated growers have to offer. Thus it happens that the mere effecting of a system of inter-co-operation would be a matter of small importance.

Here enters another and important

factor. California to-day has the most extensive and best organized system of co-operative stores in the Western world. The California system has been very closely patterned after that of Great Britain, which to-day is the largest commercial institution in existence. The California system consists of about sixty incorporated stores distributed over the Pacific slope. These have in turn organized and incorporated a Rochdale wholesale company, with headquarters in San Francisco, through which the many retail stores purchase the wares they sell at retail. All the buying and selling, from manufacturer to consumer, is done by salaried employees, and all profits on their extensive mercantile operations go to the consumers instead of to a line of jobbers, wholesale merchants, retail merchants, etc.

In all this the Rochdale system is closely patterned after the British system, though on a vastly smaller scale. The British system does nearly one-fourth of the commercial business of the nation through 2000 retail societies. The wholesale department, besides handling a vast amount in domestic goods, imports wares to the amount of several millions a month, conducts for its members a banking business of \$175,000,000 annually, and produces in its own factories nearly \$14,000,000 in various wares. The sales of the co-operative union in one year have exceeded \$327,000,000. The wholesale company, in buying for the use of its membership, knows no limits of national boundaries, race or climate. It owns lines of steam and sailing vessels that enter every important port of the globe.

One important feature of co-operative methods is the insistence upon honest dealing and the best in quality. Thus it has come about that the co-operative label has become a synonym for superior quality and for full weight and measure. This is the more remarkable when we consider that the consumers are largely of the working classes, who elsewhere are driven to the consumption of cheap and unwholesome products of competition. The British co-operative, for example, will not accept "frozen meat," as they term the American refrigerator beef, but insist upon the freshly killed article, transported alive from our shores, in their own steamships, and prepared for the block in their own slaughter houses. As a concession to a protesting element, they occasionally allow "frozen meat" to be dispensed, but at a separate counter and plainly labeled.

Another remarkable fact is that the British co-operators find their organization a complete protection against the exactions of trusts and monopolies. Neither the American tobacco trust, the salt trust nor other gigantic combinations are able to pierce their defensive armor. If salt advances in price their stores advance prices accordingly, but the added profit is returned to the members in dividends, and since they produce their own wares the trust is powerless to prevail against them.

Now, it is through an alliance with this gigantic co-operative system that the California co-operators hope to accomplish great results for the welfare of our producers. A closer union of our local co-operators is to be brought about through the Pacific Coast Co-operative Union, which meets in Oakland in June. This association has been invited to send delegates to the fifth congress of the International Co-operative Alliance, which meets in Manchester, England, in July next. A

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven Catarrh to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O.

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delegation of live men from the California association will thus be brought in contact with the leading spirits of co-operation of not only England but of continental Europe as well. The possibilities of such association are too great for speculation.

Further plans for the Pacific Coast Co-operative Union look toward a national organization of co-operative associations in the United States, thus preparing the way for a national interchange of products throughout our home markets according to a national plan, as contrasted with the anarchy which rules our present system of distribution. The growth of co-operative associations in the United States is so rapid to-day that we may look forward to a national system rivaling that of Great Britain within a few years. Nearly every State in the Union is in a ferment of co-operative activity, and no man can surely prophesy the outcome.

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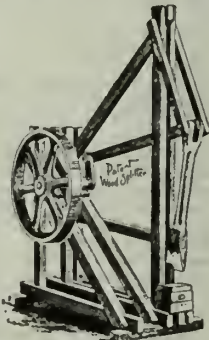
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## ENTOMOLOGICAL.

## What Beneficial Insects Have Done.

Alexander Crow, State Quarantine Officer, writes to the Pomona Times taking issue with the conviction of the late farmers' club convention at Pomona upon the question of beneficial insects. This letter is as follows:

From the fact that Prof. Cook received no responses at the Pomona meeting to his request for information as to the value of beneficial insects outside of the *Vedalia cardinalis*, in subduing injurious orchard pests, it is very evident that orchardists soon forget some of their experiences of the past and can only remember the troubles of the present.

As the Times has considerably increased the scope of Prof. Cook's audience, it gives me an opportunity to reply. Our early orange growers remember the large Wolfskill orchard of nearly 2000 trees on land that is now nearly the center of the city of Los Angeles. At the time the trees commenced to bear no scales nor other pests were known in southern California, and the trees were bright and clear. Soon after that the "soft brown orange scale," *Lecanium hesperidum*, was introduced into the orchards and gardens of Los Angeles and spread with great rapidity. Orange trees were killed by that scale and the growers were sorry they had planted an orange. Years passed and the remedies at that time were of no avail in checking that pest. Finally two inter-parasites, *Coccophagus lecani* and *Encyrtus flavus*, were accidentally introduced and the scale disappeared. We still have both parasites and it is seldom we find that scale in sufficient numbers to cause any damage.

When the late L. J. Rose of San Gabriel planted a small Japanese orange tree on his beautiful Sunny Slope estate he had no idea of the great loss the small yellow scales—*Aspidiotus citrinus*—on the leaves would cause him and the other growers of the State. The celebrated Sunny Slope avenue of fine old orange trees were cut back to the large limbs and scrubbed, but still the scale remained and spread until its natural check—*Aspidiotophagus citrinus*—from Japan, was introduced, and no one is alarmed about the yellow scale. In fact, the horticultural commissionaires do not consider it of sufficient importance to order the disinfection of trees that show traces of the "yellow scale." Prof. Cook probably remembers the stunted appearance and sparse foliage of infested trees when he came to the State. Even in Riverside and San Bernardino counties, where a scale of any description is feared, the yellow scale is left to its natural enemy.

Again, the "San Jose scale"—*Aspidiotus perniciosus*—that a few years ago destroyed the deciduous orchard in portions of the State, is only occasionally found even in districts where no spraying or other artificial methods have been taken for several years, to destroy it. The gradual disappearance of that pest is caused by the work of a small internal parasitic fly, *Aphelinus fuscipennis*. This little parasite is now well established, according to Prof. W. G. Johnson, in Maryland. From one twig 4 inches long infested with "San Jose scale," Mr. Johnson bred 1478 internal parasites.

Is it possible for either of the six species of imported parasites we now propagate for the "cottony cushion scale" to increase in such numbers? The reason, or one of the reasons, why the *Vedalia* and its co-laborers are so well-known and frequently referred to is because they are conspicuous, whereas the majority of our internal parasites are nearly microscopic and very active in their movements and on the wing.

The filthy "brown apricot scale"—*Lecanium armeniacum*—that was such a serious pest on prune, peach and apricot trees in Santa Clara county a few years ago, is causing no damage now owing to its internal parasite—*Comys fusca*. Dr. L. O. Howard took samples of infested twigs to Washington and upon examination he wrote me

that every scale was parasitized. The mealy bugs fourteen or fifteen years ago were plentiful in a number of orange orchards in Los Angeles. I hear nothing of it as an outdoor pest in that district now, as its internal parasite—*Rileyia splendens*—reduced its numbers. I have seen "mealy bugs" so numerous in the clusters of oranges that they caused the fruit to drop.

Twenty years ago the large greenish grasshopper-looking insect—*Katydid*—did considerable damage to the tender growth and bloom of orange trees. It is seldom seen now, owing to the internal egg parasite—*Eupelurus marabilis*. I could refer to other insects that are held in check by insect enemies, but the above will help to recall some of our former scales.

At present the State Board of Horticulture is experimenting with other imported species of beneficial insects that promise good results in subduing some of our present injurious scales. It is not advisable, however, to abandon artificial methods until we know positively how they will act in their new home. We know, however, that the insects are a perfect success in their native countries.

## An Issue in Onions.

The onion trust has collapsed and prices have declined, says the Stockton Independent. The Italian gardeners, who raise thousands of sacks, decided that 50 cents per sack was as cheap as they should sell their crop. On Monday they met on the water front and after not a little talk, in which about a dozen of them participated at the same time, it was agreed that each grower should deposit \$2 as a forfeit not to sell onions for less than 50 cents a sack. All of them present made a deposit and as the growers came into the city they cast their lot with the combine.

The local buyers had been paying 60 cents a sack, but as the supply increased the market declined, and last Saturday 50 cents a sack was paid. Monday about 1500 sacks were received here and it was decided that 45 cents was sufficient for them and all of the commission men made the same offers, but the trust had been formed and the Italians refused to accept the cut in prices. They remained in town all day and were somewhat surprised when no purchases were made from them, as it was known that some of the commission men had orders to fill.

The next day the same state of affairs prevailed till about noon, when the gardeners decided that the trusts were not all that had been claimed for them, and they held a meeting to discuss the matter. It did not take them long to come to an understanding. All of them drew down their money and immediately commenced selling their onions at 45 cents a sack. They did not wish to be compelled to send their onions to San Francisco, as they were on Monday evening, when over 1200 sacks were shipped. This glutted the market at the bay and prices were cut to such an extent that several of the growers lost money.

This season the onion market has declined very rapidly, but it now looks as if the bottom had been reached. Last year prices were much higher, as there was a big demand East for red onions, and the local commission men made heavy shipments every week to various points. They received good prices and, of course, could afford to pay a fair figure to the growers. This season the demand is very light, though a few carloads have been shipped East from this city, and it is expected that more will follow.

Dozens of wagonloads of onions can be seen on the water front every day. They are brought in either to fill orders or they are offered for sale. At present there are agents from Sacramento and San Francisco, as well as the local commission men, in the market, and about all of the onions offered are accepted at the regular quotations.

Heavy shipments are made to San Francisco almost every night by the buyers, as there is quite a demand for onions there. Many cars are loaded on the front for Eastern points.



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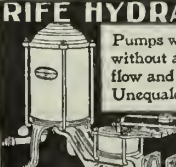
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For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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## Patrons of Husbandry.

### San Jose Grange and the Canker Worm.

The feature of the last meeting of San Jose Grange was an address delivered by County Entomologist E. M. Ehrhorn on the subject of the canker worm pest. The following is an outline of the address:

Again the State of California has been visited by what is termed a good insect season. Whenever a locality is visited by abundance of rain causing lots of luxuriant growth of weeds, etc., nature is sure to provide consumers for her verdant garb. This is the case this season as regards insects of all classes. Go where you may and you will find insects galore and naturally our orchards and vineyards are not an exception.

The insects which cause the greatest annoyance to the growers in the shortest time are caterpillars, which are the larvae of our butterflies and moths. This season we have had a good number to contend with and one species in particular, the canker worm, has given lots of trouble and has occasioned great expense. It is a great pity that the growers are not more particular in adjusting the traps which are used in capturing the wingless female moth. We also find that the growers neglect to remove the traps after they have done the work, but that they are left on the trees from one season to another. Where the traps had been properly adjusted the moths passed up the tree in spite of them and labor and money was wasted.

In case of the neglect to remove the traps after capture, the cause for failure is that the eggs that are very often laid on the traps and trunks hatched into worms which soon find their way into the tree and eat fruit and foliage. If the traps had been removed and dipped into scalding water, the bands of burlap or cotton burned and the trunks whitewashed, all the eggs would have been destroyed. Wherever this was done we have but few, if any canker worms, but on the other hand where the traps did not work and were left on the trees we are overrun with worms, which are now getting in their destructive work.

The worms once being on the tree other methods of destruction must be employed in fighting them. The two main remedies are: Shaking the worms out of the trees and banding the trunks with some sticky substance, such as coal tar, printers' ink, molasses, and combination of coal tar and tallow, etc., and spraying with Paris green as a poison. The main secret of success with these bands is to find some substance which will keep sticky for a long period so as to keep the worms from climbing back into the tree. If this is done in a thorough manner, the worms not getting food will very soon starve to death. As to the Paris green spray there seems to be a great deal of dissatisfaction, owing to the fact that in most cases the poison does not seem to kill the worms. The usual amount varies from one to two and one-half pounds of Paris green to 200 gallons of water and from five to ten pounds of slacked lime according to quantity of Paris green to prevent the burning of foliage. There is enough poison in this amount to do good work, but again we find that the cause of failure in killing the worms is on account of either having poor Paris green or in application of the spray.

The usual idea of the more you put on the better is the result, won't work with the Paris green spray. Paris green is not soluble in water, but is carried by the water as a spray on to the leaves of the tree, where it is deposited in minute globules, leaving globules containing a quantity of poison. As soon as the sun evaporates the water the Paris green will be readily seen on the leaf if a lens is used. Anybody will understand that if a coarse spray is held on the tree till the leaves drip that the drip will carry the Paris green with it to the ground; in other words if the globules on the leaf

are allowed to run together the Paris green will be carried to the edge of the leaf and from there to the ground. If such a leaf be examined one will find very little Paris green over the leaf, only possibly a little along the lower edge. Worms eating such leaves will no doubt "grow fat on the stuff," as a grower expressed himself.

The finest possible spray, with a good high pressure behind it, the solution thoroughly stirred and avoiding drenching the trees, can only bring the best results.

MR. JOHNSON'S REMEDY.—J. B. Johnson gives the Tree and Vine the following record of experience:

When the canker worms first appeared I banded the trees with P. & B. paper, and after knocking the worms off painted the bands with coal tar.

This did not get all the worms and was too slow. I then began spraying with: Paris green, 1½ pound; lime, 16 pounds; water, 200 gallons; blackstrap molasses, 4 gallons.

This has proved quite effective with one spraying, except here and there a few trees, I sprayed twice.

Trees sprayed the day before the rain of a week ago, I sprayed again.

The solution should be constantly stirred and applied under high pressure so as to produce a fine mist.

Deep down in country well and city water main are the seeds of dysentery and cholera morbus. Do not let them multiply in your body. Take Perry Davis' Painkiller when your bowels begin to trouble you. It always cures.

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## A California /Eolus.

Director of the Weather Bureau McAdie has, according to the Chronicle, forwarded to Washington a record of the windstorm of last week, made at the new station at Point Reyes. The record is considered by McAdie the most perfect ever made in any part of the world. W. W. Thomas, who was in charge, braved the fierce elements for seventy-two hours in succession in order to get the valuable data. With the gale blowing at the rate 84 miles an hour, he went out into the open, exposed position, where his anemometer had been placed, to restore the cups of the apparatus. Usually it takes at least thirty minutes to put on new cups. Thomas, however, in the face of the terrible gale, replaced them in seven-teen minutes.

In a letter to the authorities at Washington McAdie has recommended the promotion of Thomas. In his twenty years service in the Weather Bureau the director declares that he never heard of such a remarkable record being made by any official. Good records have been made of storms on Pike's peak and Mount Washington, but none so perfect both as the high velocity of the wind and the extent of time.

The record opened on Friday, May 16th, at 9 A. M., and was ended on Monday, May 19, at 9 A. M., a period of seventy-two hours. For all that time the record was complete, with the exception of the of seventeen minutes when the anemometer was being repaired. The cups of the anemometer made the enormous number of 2,350,000 revolutions, or nine every second. In the seventy-two hours the wind blew 4542 miles—1086 in the first twenty-four hours; 1580 in the second and 1876 in the third.

For over forty-eight hours ending at midnight Sunday the rate was seventy-two miles an hour; for the six hours immediately preceding midnight on that day the rate was eighty-eight miles. The windiest hour was from 5 to 6 Sunday afternoon, when the wind blew 102 miles. The highest velocity for any five minutes was at the rate of 110 miles an hour, and the highest velocity for any one minute was 120 miles an hour. Some idea of the extreme velocity can be gained when it is stated that during the Galveston disaster the rate was only eighty-four miles an hour.

## Live Stock at the State Fair.

Professor W. L. Carlyle, Professor of Animal Industry of the University of Wisconsin, and in charge of the United States Live Stock Experiment Station at Madison, Wis., has been secured by the California State Agricultural Society to judge all classes at the coming State Fair.

Professor Carlyle is an authority on live stock, with a national reputation. The most favorable results to dairymen, cattle and other live stock breeders have resulted from his department. The saving to dairymen alone by his investigations in regard to the proper care and handling of milk is estimated not less than \$800,000 a year, in Wisconsin alone.

Studies in cheese making has engaged considerable attention of his department where the celebrated Wisconsin Curd Test was devised, with the result that wherever adopted it has secured the user almost entirely against loss, amounting in some cases to an individual saving of from \$10 to \$15 per day.

The investigations made by his department in swine feeding has also been of great importance, showing that a better product can be obtained by intelligent feeding, and proving that under the system adopted that the bodies of the animal fed under his system carry a higher ratio of lean to fat.

The industry of feeding sheep for mutton has been greatly promoted by his department and has now grown to a large and profitable industry in his State.

Experiments on the best and most economical feeding of beef cattle to secure the best commercial returns have received considerable attention with very satisfactory results.

Live stock breeders from all over

California should exhibit their stock and visit the Fair, for it is seldom that they have had the chance to have their stock passed upon by so well known an authority, who will also gladly extend to visitors any information in regard to all lines of animal industry on which they may desire to have his opinion.

The board of directors propose encouraging the live stock exhibits on a more extended scale than heretofore given by this society. New educational features and attractions will be introduced and every dairyman, live stock raiser and farmer are invited to visit the Fair. They will see the best and highest types in all classes of live stock and the latest and most progressive ideas of development pertaining to agricultural interests.

The premium list is now being carefully revised and will provide for additional classes of live stock of every description.

The poultry exhibit will be on a larger scale than ever held in California; provision being made for over 125 classes of poultry.

## New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR WEEK ENDING MAY 6, 1902.

- 699,450—CORRECTING COMPASS ERRORS—J. Christensen, S. F.  
 699,451—STEERING MECHANISM—J. Christensen, S. F.  
 699,454—CULTIVATOR—F. D. Cook, Terminus, Cal.  
 699,497—WASTE PIPE CONNECTION—A. Dellamore, Los Angeles, Cal.  
 699,374—LADDER—Edmison & Myers, Spokane, Wash.  
 699,380—OIL BURNER—R. H. Fullaway, Los Angeles, Cal.  
 699,513—APRON—W. Garms, Los Angeles, Cal.  
 699,519—BOOT HEEL—M. L. Hansen, Oakland, Cal.  
 699,468—SIDEWALK TRAP DOOR—P. H. Jackson, S. F.  
 699,395—PROTECTING DYKES—W. S. Keyes, S. F.  
 699,226—FRUIT COVER—E. Nyswonger, Hanford, Cal.  
 699,635—CREMATORY—R. Robinson, Portland, Or.  
 699,417—SHIPPING PACKAGE—G. F. Samberg, S. F.  
 699,418—EGG SAFE—R. B. Sears, Sacramento, Cal.  
 699,583—MOTOR VEHICLES—H. H. Sherck, Pasadena, Cal.  
 699,586—FUSE CAP—C. E. Stevens, Lovelocks, Nev.  
 699,351—WATER MOTOR—G. E. Thurston, Colby, Wash.  
 699,431—MAIL POUCH—H. D. Welier, San Jose, Cal.

FOR WEEK ENDING MAY 13, 1902.

- 699,829—PUMP—J. Alhrczeczski, S. F.  
 700,009—NOZZLE—J. Bean, Los Gatos, Cal.  
 699,830—CARBURATOR—D. Best, San Leandro, Cal.  
 699,662—PULLEY—L. C. Coulter, Portland, Or.  
 699,912—HYDROCARBON LAMP—C. H. De Voll, Oakland, Cal.  
 700,183—FILTER—J. W. Evans, Los Angeles, Cal.  
 700,039—BURGLAR ALARM—Handy & Hosford, S. F.  
 699,755—TRAIN ORDER BOX—I. G. Hoag, Los Angeles, Cal.  
 700,069—SHOE DUSTER—W. G. Mullen, Pomona, Cal.  
 700,079—POTENTIAL REGULATOR—R. A. Philip, Seattle, Wash.  
 699,712—OVEN—F. Rademacher, Los Angeles, Cal.  
 699,822—FURNACE—R. Scott, San Jose, Cal.  
 699,826—RIDGING PLOW—J. C. Silveria, S. F.  
 700,100—DENTAL MALET—J. W. Thatcher, S. F.  
 700,102—WAGON—N. W. Thompson, Bigelow, Or.  
 699,776—IMPRESSION TRAY—E. L. Townsend, Los Angeles, Cal.  
 699,991—STOVE—B. A. Vaughn, Corning, Cal.  
 700,106—LOCK—Weber & Frey, Baker City, Or.

## Notices of Recent Patents.

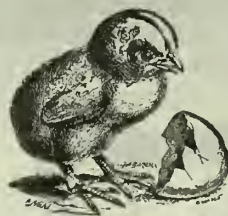
Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

CULTIVATOR ATTACHMENT.—No. 699,454. May 6, 1902. F. D. Cook, Terminus, Cal. This improvement relates to cultivators and weedeers such as are employed for cultivating the ground where corn, beets and like crops are planted in rows. It consists of a main plow frame, a supplemental lateral frame pivoted thereto carrying plows or shovels which are adjustable upon a frame, a segmentally hinged plate on the main frame which flange is concentric with the pivot of the clevis and means for uniting the clevis and flange so that the clevis may stand at any desired angle with relation to the axis of the cultivator, and a colter carried by the clevis.

EGG PRESERVING SAFE.—No. 699,418. May 6, 1902. R. B. Sears, of Sacramento, Cal. Assigned to H. C. Muddox, of same place. In this invention an apparatus is provided to prevent the yolks of eggs from settling to one side where the eggs are stored in large quantities. It consists of a box having individual compartments for the eggs in which they are kept separate, and this box is so mounted that it can be revolved at intervals to present all sides of the eggs upward and prevent such settling; means are also provided for the introduction and circulation of cold air so as to reduce the temperature and maintain it at a low degree.

DOUGH MANIPULATING AND LOAF FORMING MACHINE.—No. 698,814. April 29, 1002. E. C. Chase and I. E. Rickey, San Francisco, Cal. This apparatus is designed to manipulate dough and to fold it into the form of loaves and deliver it in readiness for the oven. It comprises rollers, endless traveling belts, with reciprocating cutting and stamping devices whereby the dough is rolled into sheets of even thickness, the edges folded over to counteract the transverse stretch, and the sheet folded lengthwise by successive operations and

cut into proper lengths, then pressed into required form for loaves. The loaves are then delivered upon carriers with folds of cloth in between them to prevent contact.



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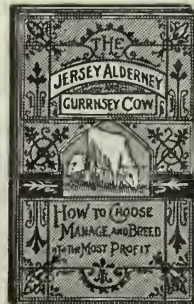
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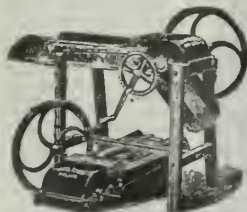
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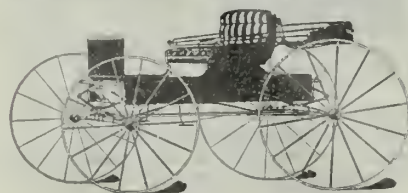
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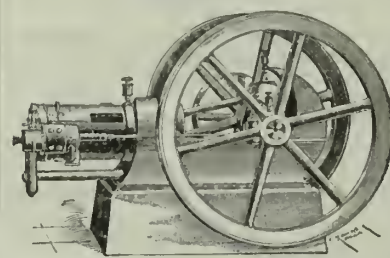


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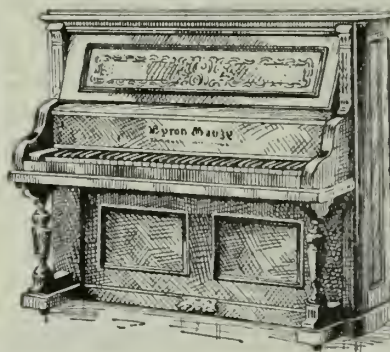
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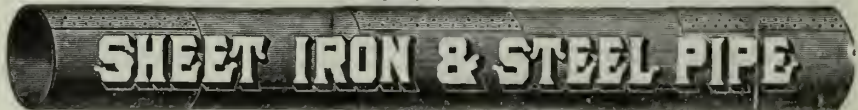
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# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 23.

SAN FRANCISCO, SATURDAY, JUNE 7, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

### California Cereal Crops.

From the little excursion down the coast, which we made on the first page last week, we return with interest to scenes in the great interior valley and show a number of views connected with the great and growing cereal products of the State. This last statement may be a surprise to some readers, who may share in the too general impression that the California cereal product is a vanishing quantity. So much has been properly said in favor of the rapid expansion of fruit products and of some of the animal products, as for instance the butter output, that the inference is too often drawn that this increase is at the expense of the cereal product, and that, as the popular products increase, the grain product decreases. This is a misapprehension. The fact, fortunately, is that, great as has been the output of other products, the grain product has advanced, and that, too, in the face of unfavorable weather conditions, which during the last three years or more have reduced the crops in some parts of the State very seriously. California is not exchanging one line of production for another; she is making an all-around development, and, though turning lands of especial adaptations to the special products which best suit them, is still breaking new land for the old staples upon which the State first gained commercial recognition, and which will long contribute to her prosperity.

The course of affairs with cereals, to which we particularly allude, is shown by the preliminary report of the U. S. Census Office on agriculture in California, from which extracts on other lines of agriculture are given on another page of this issue. The tabulations of the census show the values of the grains produced in the census year 1899 as follows:

Wheat .....	\$20,179,044
Barley .....	10,645,723
Oats .....	1,700,397
Corn .....	700,894
Rye .....	251,486

The fruit products for the same year are as follows:

Orchard fruits .....	\$14,526,786
Semi-tropical fruits .....	7,219,082
Grapes .....	5,622,825
Nuts .....	1,442,675
Small Fruits .....	911,411

Comparing the totals of these two groups, we find the grains aggregating a value of \$33,477,544, while the fruit products give a total of \$29,722,779. If to this we add the hay product, which is sister to the grain product, the total value of grains, hay and forage becomes \$52,913,942, which makes the fruit output worth but little more than half of the field combination. To show the standing of the different products by percentage, it may be stated that, of the total value of crops, cereals contributed 35.3%; fruits, 29.7%; hay and forage, 20.4%; vegetables, including potatoes, sweet potatoes, onions and sugar beets, 7.5%; nuts, forest and nursery products, flowers and plants, 4.5%; all other crops, 2.6%.

But the question at the beginning was not so much as to how the grain products compare with the fruit products, but whether the grain products have declined as compared with their records during previous decades. The answer is, as we have already anticipated, that these products have not declined in aggregate. It is true that the wheat product has decreased a little, but other grains have gained more than wheat has lost. In 1899 the total area devoted to cereals was 3,984,036 acres; in 1889 it was 3,812,751

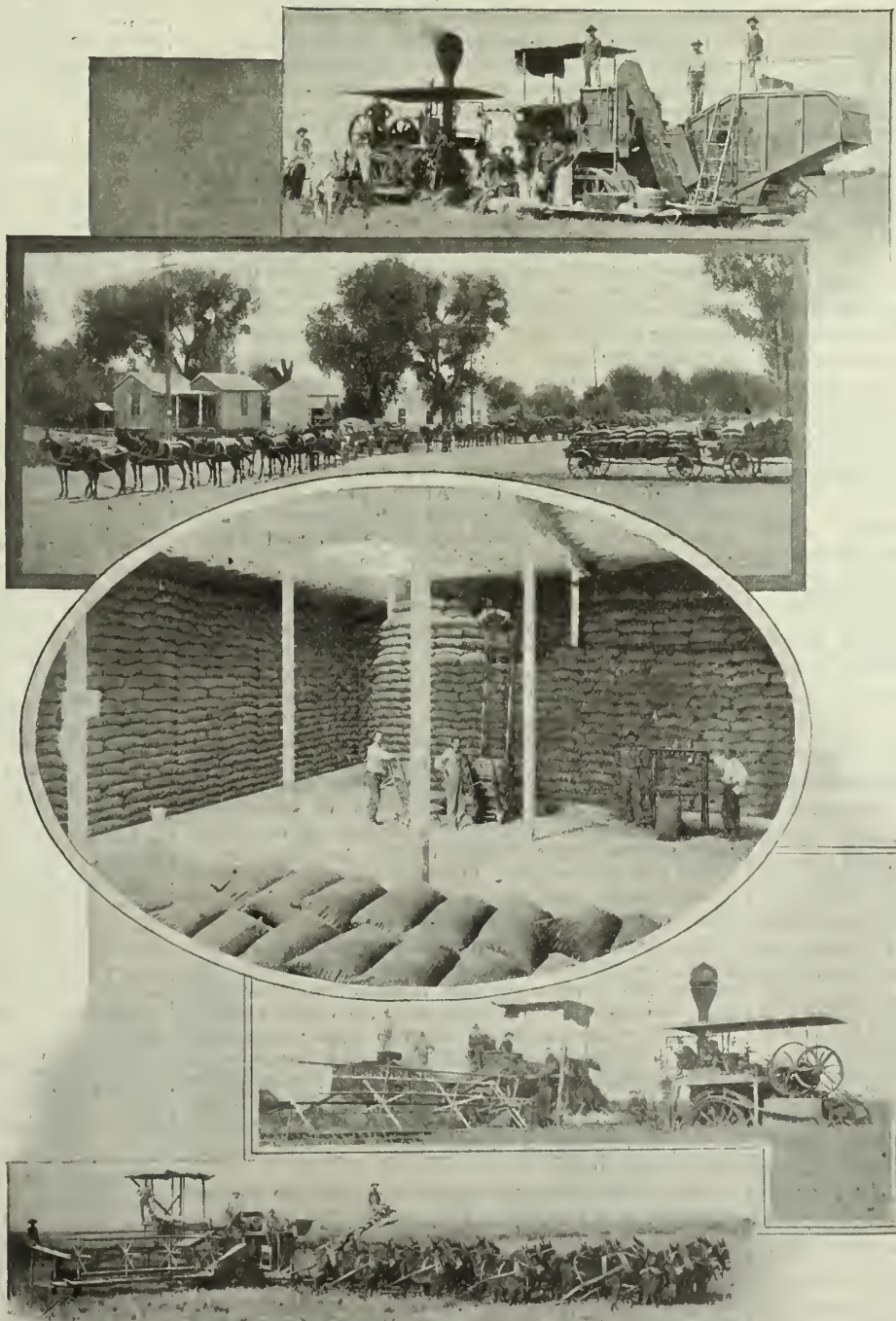
county; Sutter county, more buckwheat; Sonoma county, more corn and oats. Nearly 85% of the 420,452 bushels of Kafir corn reported was grown in the south-central counties of Fresno, Kings, Kern and Tulare. The acreage given for cereals is exclusive of that of grains cut green for hay and of that of corn, non-saccharine sorghum and similar crops grown for forage and ensilage.

The views on this page are particularly interesting in connection with the foregoing statements

They represent leading phases of grain growing in the interior valley and are from a collection of such pictures recently made for the Sunset Magazine—a popular periodical which is devoted to exposition of California progress. The views show the great in our grain growing—the use of steam not alone for threshing, but for moving and operating the California combined harvesters which cut, thresh, clean and sack while you wait on top of the machine, and only need a milling and baking attachment to serve your breakfast in less time than you would wait for it in a fashionable hotel. There is also the combined harvester operated by a drove of horses and mules, while in another picture the long teams are shown moving the grain to the railway station or boat landing. The central picture is an interior view of a grain warehouse, of which there are many hundreds in the State, in which the sacked grain is sacked roof-high awaiting transportation or ship loading.

The growth of grain is still a great interest in California, and it may be vastly greater without crowding any other agricultural product to the wall. To grow more grain to the acre as was formerly done by judicious fertilization, irrigation and the selection of more prolific varieties; to market the product with less contribution to commercial and transportation interests; to give the producer better reward for more intelligent and enterprising effort in his own behalf—these are some of the things which the future should realize.

THE Sanger Herald is informed that myriads of hoppers have appeared in the foothills of that vicinity, doing great damage to vegetation of all kinds. Alfalfa fields, orchards, vineyards and vegetable gardens have been stripped of every vestige of foliage, the orange and lemon trees especially presenting a desolate appearance. The ground is literally covered with these insects—in fact, they are so thick that the farmers crush them under their feet at every step. Even the dwelling houses are so full of hoppers that the women folks find it no small task to get rid of the nuisance. A mixture of arsenic, bran and molasses is sure death to these insects, and it is astonishing to note the result of scattering this insecticide about the orchards. While countless numbers are being destroyed, there is no perceptible decrease of the pest as yet.



Some Features of Grain Growing in the Interior Valley of California.

acres, and in 1879 it was 2,561,800 acres. In the decade from 1889 to 1899 the acreage in oats increased 167%; rye, 129.5%; barley, 26.2%. Buckwheat shows a decrease of 40.5%; corn, 23.3%; wheat, 5.5%. Although the production of buckwheat, corn and wheat decreased during the last decade, there was an increase of approximately 5% in the total production of cereals.

The largest acreage and quantities and the largest average yields per acre are found along the San Joaquin and Sacramento rivers. San Joaquin county reports more barley, rye and wheat than any other



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E. J. WICKSON. Horticultural Editor

San Francisco, June 7, 1902.

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## The Week.

Not even yet have we settled down to normal summer weather, but have had showers in the valleys, snows in the mountains and rather low temperatures everywhere. The weather and crop report on the next page tells story in detail. The best thing is that which is becoming conspicuous by absence and that is hot north winds. This will add considerably to the grain yield and the endurance of pasturage, and prove of wide value.

Outside affairs favor industrial activity. The South African war closes in time for the coronation of King Edward; the problems of the Philippines are being settled on a promising basis. Though this is a political year in California we promise to be pretty busy pushing trade and producing things and giving such most practical value to the multitudes who are coming to the State.

Shipping wheat is a little weak, but millings remain firm. Two cargoes have gone to Europe since our last report. New barley is arriving and that makes feed easier, while old brewing is steady. White oats are unchanged and colored easier. Corn is quiet and slightly downward. Bran is in light supply and high. New hay makes all old hay weak except choice stable. Beef is easier; mutton steady; hogs are lower, but steady at the decline. Butter is quiet—a little weak on the best grades and firm on cheap lots. Cheese is unchanged and is being stored for future sale. Eggs are holding up well. Poultry is moderately firm, being favored by absence of Eastern stock, which is now, however, beginning to arrive again. Choice new Burbank potatoes are in good demand at stiff prices, but Early Rose are not doing so well. Old are out of request. Onions are in free supply and cheap. New green corn has come in from Vacaville. String beans have met a marked decline. Green peas are recovering a little and choice are selling fairly. A few peaches and cherry plums are in this week. Cherries are abundant. Oranges are nearly out and a few fancy Navels sell well. Lemons and limes are unchanged. Dried fruit is nominal and prospective buyers are bluffing on alleged futures, in the hope of bearing prices of new crop. Wool is quiet and little doing.

The development work in the different regions of central California is going forward diligently and effectively. As shown by an article on another page, the coast county convention at San Jose last week was a great success and will accomplish much. This week there is activity in the central foothill district. It is strengthening to feel the shoulders touch as they are forced upon the load. It will move things. The PACIFIC RURAL PRESS believes in such efforts for the upbuilding of the State.

## Grasshoppers in the Foothills.

LET ALL OUR READERS UP AND AT THEM!

Just as we go to press we learn that on the higher lands on the east side of the Sacramento and San Joaquin valleys grasshoppers are hatching out in unusual force, and promise considerable injuries to all kinds of growing crops, as well as to orchard and vineyard properties. It is about five years since the last grasshopper invasion, and at that time there were considerable losses through their work. It is advisable for everyone in the districts which lie in the direction of their westerly march toward the valley and in the line of the flight which they will make as soon as they get their wings, to prepare to protect his products against them. Fortunately, much can be done by timely and vigorous effort, and we give prominent place to a carefully prepared sketch of the various ways in which the hoppers have been successfully resisted. We hope all our readers in the threatened districts will give heed to this warning and exhortation to fight, and will also make the methods known to all their neighbors who may not have our journal in their homes, in order that a wide resistance may be made. To get everybody to doing something is more than half the battle. The following are methods of grasshopper killing which have proven successful in California and elsewhere:

**POISONING.**—In vineyards and other plantations, where it is not possible to use killing machinery, poison has often proved very valuable. The following is the recipe: Fill the washtub about three-fourths full of bran, add six pounds of arsenic, and mix it thoroughly with the bran; put about four pounds of coarse brown sugar in a pail, fill the pail with water and stir until the greater part of the sugar is dissolved. Then pour this sugar-water into the bran and arsenic, and again fill the pail with water, and proceed as before until all of the sugar in the pail has been dissolved and added to the bran. Now stir the latter thoroughly, and add as much water as is necessary to thoroughly saturate the mixture, and it is ready for use. Throw about a tablespoonful of this mixture upon the ground beneath each vine infested with grasshoppers, and in a short time the latter will leave the vine and collect upon the bran and soon commence feeding upon it. Those which are upon the ground 6 or 8 feet from the bran will soon find their way to it. After eating as much of the bran as they desire, the grasshoppers usually crawl off, and may hide themselves beneath weeds, clods of earth, etc., and in a few hours will be found to be dead. A common washtub of this mash is sufficient for about five acres of grapevines. To enable one to gather up the remnants of the poison after its work is done, the practice is adopted of placing the poison on shingles or other thin pieces of wood, which can be easily seen and emptied. All such surplus poison should be deeply buried in the ground. There is some little difference of opinion as to the proportion of arsenic which is best; also as to the advisability of using a little middlings to make the mixture more compact. One prescription is as follows: Forty pounds of bran, fifteen pounds of middlings, two gallons cheap syrup, twenty pounds arsenic, mixed soft with water. Others reduce the arsenic to fifteen pounds and others to ten pounds, with the same weights of other ingredients.

**BARRIERS.**—As to barriers to grasshopper progress, a small stream is no protection whatever, but rather the reverse, as the insects float down and land wherever there is food, and then go off again; but a large river being too wide to float across is a great protection. A small ditch can, however, be made available by covering it with a film of petroleum. By rigging a can of kerosene so it will leak about four drops per minute upon the slowly moving water, will spread a deadly film of oil over the surface of the ditch.

Other barriers which can be used to protect orchards and vineyards which are in the path of the invasion, may be described as follows: One of the best ways to kill the young insects is by ditching or trenching. Simple ditches, 2 feet wide and 2 feet deep, with perpendicular sides, offer effectual barriers to the young hoppers before they get their wings. They accumulate in such ditches and die in such masses that the stench from them is intolerable, and the practice is to bury them with soil. In order to keep the main trenches open, it is customary to dig pits here and there in the trenches, which are filled up as soon as full of hoppers, and other pits dug for new-comers.

Prof. Riley says that where ditches are not easily made, and where lumber is plentiful, a board fence 2 feet high and with 3-inch batten nailed on the top or side from which locusts are coming, the edge of it smeared with coal tar, will answer as an effectual barrier, and prove useful to protect fields or gardens.

It is stated that when the hoppers commence to fly they need not be feared in the vineyards, since by building fires and making smoke, such as is used as protection against frost, the pests can be prevented from lighting on the vines.

**SULPHUR SMOKING.**—A Nebraska farmer furnishes

one of our San Francisco contemporaries with what he claims is an infallible means of driving away the grasshoppers. He thus describes it:

Take hay, straw or rubbish, and dump it off in forkfuls a rod apart over the field on the windward side. Next, sprinkle from one-fourth to half a pound of sulphur on each pile, and in the evening set the substance on fire. About sundown, the air being sufficiently heavy to keep the smoke down close to the ground, the wind will roll it all over the field. The smoke will scent everything growing upon the field to such an extent that grasshoppers will never come there again during the season that the sulphur is applied. I tried this method for three seasons in succession when the grasshoppers swarmed in myriads from the Rocky mountains, and it always proved successful. The fourth time I applied the sulphur smoke the troublesome insects had been hatched upon the field and had cut off the crops of wheat clear to the roots, but after being 'smoked' they disturbed nothing further. For about eighty acres of land from forty to fifty pounds of sulphur are required."

**USING FIRES AND DITCHES.**—At the last invasion the Natoma vineyard, near Sacramento, was saved by firing the grass along the roadways and all grassy patches and driving the pests into the flames and ditches. The great attack was from the foothills outside the ditch that encircles the vine tract, and they were kept out. The attempt was made along the eastern border of the vineyard to keep the destructive hordes moving southward, and to this end a gang of Chinese were kept beating the ground with boughs and sacks. The greater dependence on the Natoma estate is put in driving them into the open water courses and by firing the grass on the hard and baked hatching grounds.

**STRAW TRAPS.**—Many insects are easily destroyed on open lands by burning straw. The straw was laid in long lines and 10 or 20 feet wide. The hoppers in their march, or on being driven from other places, would take shelter under the straw, seeming to prefer it to grass, brush and all other things. They could scarcely be driven out of it. When the straw was sufficiently full of them it was fired, and the destruction of almost every grasshopper in it was assured.

**ASPHALTUM PANS.**—In Kern county in previous years the pest has been routed and slain almost to extermination. A sheet of iron 16 feet long and 4 feet deep, turned up like a sled runner at the front edge, is hitched behind two horses. Between this iron and the horses small chains are so fixed as to sweep the ground, thus causing every grasshopper to "get out of that." There is a slight rim around this plate of iron, and upon its upper surface very liquid asphaltum is poured. Then the team is started up, dragging this plate upon the ground behind it, with the result that every single grasshopper in its course, which is large enough to jump, sooner or later falls into the asphaltum and perishes. The least particle of asphaltum ruins him, so that those who even touch it are lost. In places it has been found that in a trip of half a mile the asphaltum became so loaded with grasshoppers that it had to be scraped off and a fresh layer added. It is estimated that each layer of asphaltum will hold 125,000 grasshoppers, a harvest of 250,000 grasshoppers per mile.

Having proved the efficacy of this method, the Kern County Land Company went at the work of extermination in the most thorough way. Eleven of these plates, 16 feet by 4, were hauled abreast, making a moving line of asphaltum 176 feet long and 4 feet wide, capable of catching 2,750,000 grasshoppers every mile, provided that the supply held out; and as 18 miles' travel is a day's work, that made 49,500,000 grasshoppers in asphaltum sauce every day.

**HOPPER DOSERS IN MINNESOTA.**—A somewhat similar arrangement was very effectively used in Minnesota. Prof. Otto Lugger, State Entomologist, has had in successful operation in the Red River valley and in Chicago and Pine counties 400 "hopper dosers." The "hopper doser" is a machine about 8 feet long and 2 feet wide. It is made on the plan of a dustpan, is of tin and sits on three runners, on which it is pulled over the fields by a team of horses. At the rear of the pan there is a trough the entire length of the machine, in which there is an inferior grade of crude oil, while at the back of the machine there is a sheet of canvas. The hoppers jump into the pan to get out of its way. Those that fall into the kerosene and are immersed in the fluid die at once, while the hoppers that are merely touched by the oil may live two or three minutes before they succumb. It costs the State \$1.50 to make each of these machines. They are given to the farmers in hopper-infested communities in order to encourage them in getting rid of the pest. Four hundred and twenty machines were in operation and Prof. Lugger thus figures their destructive capacity: "Each machine caught by actual measurement two to six bushels of grasshoppers. As, however, about ten times as many more hoppers jump into the oil and out again to die later, such a machine killed from twenty to sixty bushels. We had 420 machines, and there were many days when all of them were in operation. Of course the killing of such immense numbers of insects had the desired effect and saved the crops in the regions infested—in all about 70 square miles."



QUERIES AND REPLIES.

Live Stock on Alfalfa.

To THE EDITOR:—Please let me know if the industry of stock raising (beef cattle) is carried on in this State to any extent on irrigated alfalfa land. Would you consider it possible to engage in raising beef on such land, if it can be bought for \$40 per acre? I will watch your columns for answer.—HOMESEEKER, Alameda.

If you had been longer a reader of the PACIFIC RURAL PRESS you would know that a large part of the beef produced in California comes from the alfalfa lands of the San Joaquin valley, all of which are irrigated. The amount of feed produced per acre on good alfalfa land properly managed is immense, and you can get such land under ditch in some parts of the valley for the price you mention, or even less, in some of the newer irrigated districts. This fact is not as widely known as it should be, and those having such lands should advertise them better in the PACIFIC RURAL PRESS, which is read by just such home-seekers as the above. The buyer must, however, exercise due discretion in selecting lands, for not all lands which he can buy for \$40 or less will bring him the rewards he seeks. He also must be sure to grow stock which will pay him well for the feed. We believe there are few things better than good beef on good alfalfa land, managed by a good man for the business.

Pruning Young Prunes---Lining for Sulphur Boxes.

To THE EDITOR:—I have some young French prune trees, three years old last January. The first two seasons I headed them back to the desired amount of limbs, cutting them back very severely; last fall I cut them back to where I wanted the second branches. Now what I want to ask you is this: Would it be best to top them this summer (where I want the third or last branches) or wait until they are dormant? If you favor the former, what month would you advise doing it in? Would you thin out at the same time or simply top everything and thin out later on? What would make a good lining for old sulphur boxes to prevent leakage?—SUBSCRIBER, Santa Clara Valley.

Either pinch the new growth as soon as it runs about the distance you desire, and force it to branch at once, or let the growth proceed until the late fall or winter pruning. The latter way is, on the whole, best for strength in the tree; but where the trees grow very rapidly, pinching is a good way to get shape quickly. Do not thin shoots now on a young tree. Let them grow and thin out next winter. B. & B. building paper is good to line your sulphur boxes with.

Vetches in the Interior Valley.

To THE EDITOR:—Will vetches make good pasture on land that is sandy and gravelly with no water except the rain? Also are vetches suitable for green manuring in an orchard in the river bottoms of Fresno county? What is the time of sewing the best variety, etc.?—READER, Fresno.

The vetches will make good winter pasturage and will grow on sandy and gravelly land during the rainy season. They are, however, quite sensitive to heat and drouth, and without irrigation will not make much growth after the hot weather begins. These remarks apply to growing vetches in the open field and in orchards, although on the river bottom the growth will be maintained later in the hot season providing there is moisture in the soil. What is called "hairy vetch" is, perhaps, on all accounts the best for California, though other varieties are also promising. The best time for sowing on dry lands or to secure winter growth for plowing under in the orchard is at the beginning of the rainy season in the fall. Very little can be obtained by spring sowing except on moist bottom land.

A Foothill Cicada.

To THE EDITOR:—I send a lace-winged moth which I found on an apple tree. Its identity is unknown to me, and I would like to know whether it is injurious or not, and what its general practice is with regard to fruit trees.—ORCHARDIST, Tollhouse.

The insect which you send is one of the annual cicada's. It does most harm by chiseling into the twigs of the apple tree and depositing its eggs therein. This causes the twigs to swell somewhat, but it does not usually do them serious injury, for as soon as the young insect hatches and creeps out the

wound heals over. It has been supposed that to spray the trees early in the season with whale oil soap, one pound to four gallons of water, would make the bark distasteful to the insect, but whether this has been satisfactorily demonstrated to be the case we are not aware. The insect is not counted a great pest and its work has never been reported except from the upper foothill region.

Plant Lice on Strawberries.

To THE EDITOR:—Is there any remedy for lice on strawberry plants? I had what I thought was a very promising patch of vines, but I can see now that they are not going to amount to anything. They have only been out two years and ought to be at their best. They have made slow growth and the berries are going to be small, and lots of them have blighted, although the leaves are green and healthy. The lice are on the under side of the leaves, are small and of a brownish color. I gave the vines a dressing of chicken manure and hard wood ashes in February and have done everything to insure a good crop, and I can't imagine what is the matter unless it is the lice.—READER, Butte county.

It will be necessary for you to protect your strawberry plants by spraying with kerosene emulsion, which is on all accounts the cheapest and best, using a cyclone nozzle, which will enable you to throw the spray upwards, so as to strike the underside of the leaves. Care must be taken that the oil and soap-suds are violently agitated together until the emulsion appears. When this is obtained it may be mixed with ten to fifteen times its bulk of water without separation of the oil. It is likely that if you can kill the lice which are now upon the bushes that the lady-bugs may multiply and keep your plants free from lice during the balance of the season.

Too Much Richness.

To THE EDITOR:—I have turned an old chicken lot into a vegetable garden, and as it was formerly a dumping ground for wood ashes the vegetables do not do well. Is there anything I can put into the soil to destroy the effect of the lye that comes out when I irrigate the plants?—GARDENER, Watsonville.

The land which you speak of is evidently too rich for plant growth, and at the same time the fertilizing material in it is too valuable to be destroyed, nor could it be very cheaply done. It would be a better proposition to treat that soil as manure, dig out at least parts of it in trench form and wheel or haul it away on other ground, where it will be valuable, and bring in other outside soil to fill the excavations; then plow or otherwise mix up the soil as thoroughly as possible, and you will have a piece of land that will be very productive for a long time for vegetable growing. You will find this soil that you haul out from your garden very desirable as a fertilizer for fruit trees or for other crops.

A Common Roadside Weed.

To THE EDITOR:—Enclosed find a slip of a plant which I would like to ascertain the name and use of. It is most prominent during the dry summer, when it stays green. It grows in the form of runners, covering the ground. I would like to know whether it may become a nuisance.—READER, San Diego county.

The plant which you send is Polygonum aviculare. It is not liable to become very troublesome, because it has no running roots or stems, but branches out from a single tap root, and can, therefore, be easily destroyed. It is of some little account as a forage plant for sheep or burros, but as a rule throughout the State is of little account, generally appearing on roadsides or on vacant town lots, etc. So far as we know it has never proved troublesome in cultivated ground.

Do not Put Apricots on Almond.

To THE EDITOR:—Can I bud apricots on almond trees that are six or seven years old? If so, can I bud into the old wood, or will I have to let suckers grow?—ORCHARDIST, Ventura county.

It will not do to bud the apricot upon the almond, for, although the buds may take and some growth may be secured, the union is insecure and likely to break away, even after it has attained considerable size, and may be laden with fruit. We have seen trees 4 inches in diameter part in this way, and the joints show that there had never been any satisfactory union of the two woods. You can successfully bud peaches, other varieties of almonds, French and

some other prunes or Japanese plums into your almonds and secure a good union. In some of these cases you can work successfully into the old bark, but a greater percentage of success will be secured by working into new growth.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 2, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Abnormally cool weather has prevailed during the week, with fresh southerly winds and rain, and heavy snow in the mountains. Grain has been benefited by the cool weather and but slightly damaged by rain; wheat, oats and barley are in excellent condition, and prospects continue good for heavy crops. Haying has been somewhat retarded and some hay damaged by the rain. Cherries and other small fruits were also considerably damaged, but in other respects the rain was very beneficial. A shipment of apricots was made from Guinda early in the week. All deciduous fruits are in good condition and advancing rapidly, with indications of a heavy yield. Blackberries and strawberries are abundant and of excellent quality.

COAST AND BAY SECTIONS.

Cool weather during the week has retarded growth and development of fruits. Brisk winds have prevailed in most sections, and heavy rain has fallen in the central and northern counties. Cherries, strawberries and hay have been considerably damaged by the rain, but hops, corn and vegetables greatly benefited. The hay crop is reported very heavy in the central and northern counties, but light in the south. Grain is in excellent condition and heavy crops are expected in all except the southern counties. The fields in Alameda county are unusually green for the season. Vines are very thrifty and full of grapes. Prunes in Sonoma county are developing better than expected, and some growers expect two-thirds of a crop. Peach trees are heavily laden and thinning will be necessary. Citrus fruits are in good condition.

SAN JOAQUIN VALLEY.

The weather has been generally clear and cool during the week, with brisk winds. Light rain has fallen in the central counties, and heavy showers occurred in the north on Saturday. The rain caused considerable damage to cut hay and ripening cherries in some sections, but was beneficial to all other crops, especially late grain. Wheat is in good condition, except in the south, and a fair yield is expected. Harvesting has commenced in Madera county. The second crop of alfalfa is being cut. Grain hay is reported unusually heavy and of superior quality in the northern counties. Green feed is plentiful. Vineyards are thrifty, and give indications of a heavy yield. Apricots are ripening in Fresno county. Blight will cause a heavy loss in the pear crop. Other deciduous fruits will yield heavily.

SOUTHERN CALIFORNIA.

Generally clear, warm weather has prevailed during the week, and no rain has fallen. Haying is progressing; in some places the crop is reported much better than expected, and others the heaviest for several years. There will be a fair yield of barley and about half the average yield of wheat in some sections. Pasturage is becoming scarce. Vegetables are plentiful and of superior quality, and potatoes are unusually thrifty. The sugar beet crop at Anaheim will be light. Walnuts are doing well, but are dropping in some places. Prospects are good for a large yield of grapes. Apricots are lighter than expected. Citrus fruits are in good condition.

LOS ANGELES SUMMARY.—Cool weather retarding growth of crops in southern sections. Orchardists are busy thinning peaches and apricots. Vineyards show excellent growth.

EUREKA SUMMARY.—Weather generally favorable for farmers. Crops are in good condition and making satisfactory growth. A very good yield of fruit is expected. Early strawberries were somewhat damaged by Saturday's rain.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 4, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rain-fall to Date	Total Seasonal Rain-fall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the Week	Minimum Temperature for the Week
Eureka.....	1.40	51.88	47.46	42.64	60	46
Red Bluff.....	.16	31.75	24.64	24.44	80	50
Sacramento.....	.14	17.95	20.21	23.38	74	46
San Francisco.....	.19	18.98	21.17	24.73	62	50
Fresno.....	T	6.85	11.33	13.08	88	44
Independence.....	.00	4.34	6.17	5.50	88	40
San Luis Obispo.....	T	21.95	31.14	17.38	80	46
Los Angeles.....	.00	10.57	16.29	17.48	80	48
San Diego.....	.00	6.16	11.43	7.61	70	52
Yuma.....	.68		3.60	2.89	102	56



## THE FIELD.

## Agriculture in California.

NUMBER 1.

From advance sheets of the Twelfth Census of the United States (1900).

California, the second largest State in the Union, has a total land area of 155,980 square miles, or 99,827,200 acres, of which 28,828,951 acres, or 28.9%, are included in farms.

The northern part of the State is rugged and mountainous, but contains some fertile valleys of small size. From this region two mountain ranges extend southward, one along the coast and the other along the eastern boundary. Between these two ranges lie the Sacramento and San Joaquin valleys, comprising the largest body of farming land in the State. In the south the surface becomes more even, the coast mountains almost disappearing.

The soil of the northern valleys is very rich, but the mountains are generally wooded, and suitable only for grazing purposes. The soils of the Sacramento and San Joaquin valleys vary from a sandy loam to heavy clay, and are everywhere fertile. The southern part of the State is generally arid, but under an extensive system of irrigation the land has become exceedingly productive and valuable.

The diversity in the soil and in the climate of California renders possible a greater variety of agricultural products than is found in any other State of the Union.

**NUMBER AND SIZE OF FARMS.**—Most of the farms reported in 1850 were cattle ranches operated by Mexicans under Spanish land grants. The discovery of gold in 1849, and the subsequent rapid immigration, resulted in abnormally high prices for farm produce and in a marked development of agriculture. The great increase in the area of improved farm land in the decade from 1850 to 1860 marks the real beginning of agriculture in California.

Since 1860 the number of farms has increased steadily, the rate of gain for the last decade being 37.1%. The total area in farms, also, increased rapidly, from entry on the public domain and purchase or lease of railway subsidy lands. The increase in the area of improved farm land has kept pace with the general advancement, although, on account of the adoption by recent censuses of a stricter definition of the term "improved land," and the conversion of agricultural land into cattle ranches, a decrease is shown for the last decade. The average size of farms has decreased as intensive cultivation has become more general, and as special branches of agriculture have been developed.

**FARM PROPERTY AND PRODUCTS.**—The total value of farm property increased very rapidly until 1890, but for the succeeding decade a gain of only 3.2% is shown. This small increase is doubtless due in part to the financial disturbances in 1893, and the subsequent period of depression, as the very substantial gain made in the value of farm products furnishes conclusive evidence that the agricultural interests of the State are not declining. The value of land, improvements and buildings increased 1.5% from 1890 to 1900. The value of implements and machinery increased 45.1% and that of farm products 51.3%, a portion of each increase being, doubtless, the result of a more detailed enumeration in 1900 than heretofore. In the same period the value of live stock increased 11.7%.

The low value of land, improvements and buildings in 1850 and the high value of live stock, which nearly equalled that of all other forms of farm property, were due to the conditions explained above. The decreasing percentage of the total value of farm property represented by the value of live stock, and the rapidly increasing relative value of implements and machinery, reflect the gradual transition from grazing and stock raising in general to intensive cultivation of the soil.

**INCREASE IN THE NUMBER OF FARMERS IN CALIFORNIA.**—From 1850 to 1900 the population of California increased from 92,597 to 1,485,053, or sixteenfold, while the number of farms increased from 872 to 72,542, or over eightyfold. In other words, from 1850 to 1900 the number of farms, and hence the number of persons operating them as owners or tenants, increased faster than the population. This statement applies also to the decades, 1850 to 1860, 1870 to 1880, and 1890 to 1900.

Data showing, with any exactness, the relative increases in the various classes of the farm population are available for only a portion of the fifty years covered by the foregoing comparisons. That portion is the period from 1870 to 1890, during which time the number of farms, and hence of farm owners and tenants, increased approximately 123.0%, while the total State population increased but 115.6%. During the same period the number of males engaged in agriculture increased from 47,580 to 126,711, a gain of 166.3%, which represents approximately the rate of increase in the total number of persons living on farms; and the number of males working for wages on farms increased from 16,156 to 51,532, or 219.0%. These figures show that, in the period mentioned, California was one of the few States that added more

to its agricultural than to its other population. Of the different classes of farming population the gain was largest among those working for wages, although the numbers of farm owners and tenants increased faster than the total population. This increase in the number of those working for wages in California was incidental to the introduction of more intensive methods of cultivation, and to the development of such special branches of agriculture as fruit growing, in which California now leads. The beginnings of these changes were made by the owners of the large ranches into which the entire farming area of California was originally divided.

In the last decade the number of farms, and hence, of owners and tenants, increased 37.1%, while the total rural population increased but 12.7%. This indicates that in the last ten years, unlike the two decades preceding, the number of persons operating farms as owners or tenants increased faster than the number of those who worked for wages. The more intensive cultivation of the soil and the growing of fruit, which were introduced between 1870 and 1890 by large capitalists who employed many hired laborers, seem now to be passing to a considerable extent into the hands of smaller farmers, who, as owners or tenants, manage to cultivate their lands in person.

**FARM TENURE.**—The percentages indicate a marked improvement, in the last two decades, in the social and economic condition of the California farmer. During this period great additions were made to the rural population, partly by immigration from other States and from foreign countries. The number of farms operated by owners increased 93.6%, and the number operated by tenants 135.3%, the former showing the greater increase from 1880 to 1890 and the latter from 1890 to 1900. Had the number of farms operated by owners increased only as fast as the rural population, the number of such farms in 1900 would have been less than it was by 14,670. The gain in number of tenants, above the gain that would have been made had the rate of increase been the same as that of rural population, was 6596. A part of this increase, relatively large, in the number of farm owners and tenants since 1880 is doubtless due to the fact that the increase in the number of persons engaged in agriculture was greater than the number of those employed in lumbering, mining and kindred occupations. The change shown by these figures, in the average condition of persons working on farms, is the opposite of that reflected in the occupation tables of 1870 to 1890, which showed a greater increase in the number of farm laborers than in the number of owners and tenants.

The number of 1607, or but 2.2%, of the farms of the State are operated by colored farmers. Of the white farmers 72.9% own all or a part of the farms they operate, and 27.1% operate farms owned by others. For colored farmers the corresponding percentages are 47.3 and 52.7.

Chinese farmers are nearly all tenants, and as a rule pay a cash rental. The Indians generally own the farms they operate.

**FARM VALUES.**—Of the farms of the State, 97.8% are operated by white farmers and 2.2% by colored farmers. The average values of the various forms of farm property and the average value of products are much lower for farms operated by colored farmers than for those operated by white farmers. The higher percentages of gross income for colored farmers is largely due to the fact that the farms operated by Chinese and Japanese are nearly all intensively cultivated vegetable farms, vineyards, orchards, etc. The percentages for farms of negroes and Indians do not differ widely from those shown for white farmers.

The average values shown for farms operated by Chinese and Japanese are very high, but it should be borne in mind that very few of the Chinese and Japanese own the farms they operate, and that the farms they do own have very much lower average values than the farms which they rent.

The farms conducted by managers have larger average areas and higher average values of property and products than the farms of any other group by tenure. The large ranches, vineyards and orchards of which this group is chiefly composed represent greater investments, and their operation generally requires more capital, than the average farmer can command. Men wealthy enough to own such farms rarely operate them in person.

**SIZE OF FARMS.**—The group of farms each containing 1000 acres or over comprises more than one-third of the total value of farm property and nearly two-thirds of the total farm acreage.

With a few exceptions the average values of the several forms of farm property and products increase with the size of the farm. The high average value of live stock for farms under three acres is due to the fact that some of them are stock farms using ranges and a large number are city dairies. The high average and percentage of gross income shown for this group are due to the fact that, in addition to these stock farms and dairies, it includes 125 florists' establishments. It should be borne in mind that the incomes from dairies and florists' establishments are determined not so much by the acreage of land used as by the amount of capital invested in buildings, implements and live stock, and the amounts expended for labor and fertilizers.

**ACREAGE INCOME.**—The average gross incomes per

acre for the various groups classified by area are as follows: Farms under 3 acres, \$253.89; 3 to 9 acres, \$67.86; 10 to 19 acres, \$48.39; 20 to 49 acres, \$29.40; 50 to 99 acres, \$17.35; 100 to 174 acres, \$6.96; 175 to 259 acres, \$7.71; 260 to 499 acres, \$5.14; 500 to 999 acres, \$4.17; 1000 acres and over, \$2.02.

For the several classes of farms the average values per acre of products not fed to live stock are: Flowers and plants, \$344.16; nursery products, \$79.03; sugar, \$19.97; vegetables, \$17.51; fruit, \$17.35; dairy produce, \$4.46; miscellaneous, \$4.17; hay and grain, \$3.96; tobacco, \$2.32; live stock, \$1.79. The wide variations in the averages and percentages of gross income are largely due to the fact that in computing gross income no deductions are made for expenses involved in operation. For florists' establishments, nurseries and market gardens the average expenditure for such items as labor and fertilizers represents a far greater percentage of the gross income than in the case of hay and grain, live stock or miscellaneous farms. If it were possible to present the average net income, the variations shown would probably be comparatively slight.

Many of the farms reporting no income for 1899 were fruit farms with trees or vines too young to bear; some were country homes of business or professional men, while others were homesteads taken up shortly prior to the date of enumeration. There were some farms, also, from which no reports of the products of 1899 could be secured because the persons in charge—June 1, 1900—did not operate the farms in 1899. To this extent the reports fall short of giving a complete exhibit of farm income in 1899.

**LIVE STOCK.**—At the request of the various live stock associations of the country, a new classification of domestic animals was adopted for the twelfth census.

The age grouping for neat cattle was determined by their present and prospective relations to the dairy industry and the supply of meat products. Horses and mules are classified by age, and neat cattle and sheep by age and sex. The new classification permits a very close comparison with the figures published in previous census reports.

The total value of all live stock on farms and ranges, June 1, 1900, was \$67,242,112. Of this amount the value of horses constituted 26.5%; dairy cows, 16%; other neat cattle, 32.6%; sheep, 10.4%; mules and asses, 7.1%; swine, 3.7%; poultry, 2.8%; all other live stock, 0.9%.

No reports were received of the value of animals not on farms, but it is probable that such animals have higher average values than those on farms. Allowing the same averages, however, the total value of all live stock in the State, exclusive of poultry and bees not on farms, is approximately \$72,827,000.

In 1899 the value of animal products was \$36,324,894, or 30.7% of the gross farm income. Of the above amount 43.4% represents the value of animals sold and animals slaughtered on farms; 33.4% that of dairy produce; 17.5% that of poultry and eggs; 4.8% that of wool, mohair and goat hair; 0.9% that of honey and wax.

**DAIRY PRODUCTS.**—With respect to the number of farmers engaged in its pursuit, dairying holds fourth place among the various branches of California agriculture. Of the 72,542 farms of the State in 1900, 8686, or 12%, were dairy farms. The increase in the production of milk during the last decade was 42,493,555 gallons, or 38.2%, although the population of the State increased but 22.7%. The average production per capita for the State increased from 92 gallons in 1889 to 103.5 gallons in 1899. In Yolo, Calaveras, Trinity and Stanislaus counties the gains were especially marked, the production in 1899 being between two and three times as great as that reported for 1889. Since 1880 the quantity of milk sold has increased 44,187,768 gallons, or over fourfold. These gains all support the conclusion that dairymen are not only keeping better cows, but devoting more care to their herds than they did ten years ago.

A comparison with the figures for 1890 shows a decrease of 22.1% in the quantity of butter, and an increase of 9.8% in the quantity of cheese, made on farms. In 1900 butter was reported by 32,088 farmers, who produced an average of 650 pounds per farm. Cheese was reported by 420 farmers, but the average production per farm was 10,118 pounds.

Of the \$12,128,471 given as the value of all dairy produce in 1899, \$2,956,217, or 24.4%, represents the value of dairy produce consumed on farms, and \$9,172,254, or 75.6%, the amount realized from sales. Of the latter amount, \$5,847,591 was derived from the sale of 56,540,946 gallons of milk, \$2,903,714 from 15,236,667 pounds of butter, \$364,456 from 3,989,893 pounds of cheese, and \$56,493 from 71,305 gallons of cream.

**POULTRY AND EGGS.**—The total value of the products of the poultry industry in 1899 was \$6,356,746, of which amount 39.2% represents the value of fowls raised and 60.8% that of eggs produced. Nearly 11,000,000 dozen more eggs were produced in 1899 than in 1889, the per cent of increase being 78.7.

**WOOL.**—The production of wool has decreased steadily since 1879. In the last decade the decrease was 2,678,052 pounds, or over 16.4%. The average weight per fleece, however, remained practically the same, having been 4.8 pounds in 1889 and 4.7 pounds



in 1899. Lake, Tehama and Shasta counties reported nearly one-half of the total number of fleeces of mohair and goat hair.

**HONEY AND WAX.**—The quantity of honey produced in 1900 was 3,667,738 pounds, a decrease of 262,151 pounds, or 6.7%, from the production in 1899. The production of wax increased 91.5%. The largest decreases in the production of honey were in the southernmost counties, where severe droughts injured the alfalfa and other food plants of the bee. There were marked increases in Fresno, Kern and Tulare counties.

## THE STOCK YARD.

### Are We Making a Mistake in Neglecting the Holstein Cow?

NUMBER III.—CONCLUDED.

By WALTER GAMMON at the Courtland Farmers' Institute.

**HARDINESS.**—In constitutional vigor or vital force, that element which produces endurance under great strain of any sort, in the race horse under the strain of terrific speed, in the milch cow under the strain of enormous production, the presence or absence of this element is especially manifest in the growth and development of the young of the different breeds. The young of one live and grow without special care or attention; of the other, they perish easily if they do not have the best of care. It is claimed by the breeders of the Holstein-Friesian cattle that they possess this vital force more strongly than that of any other improved dairy breed. The males, hardly without an exception, have the peculiar gift of transmitting to their progeny great vital force and power of recuperation, should disease in epidemic form make its appearance among them.

**FEEDING.**—The Holstein-Friesian animal always requires an ample supply of food, but is by no means choice as to the quality of the food. This is so important a matter in a profitable dairy animal that we can not afford to pass it by without notice. A dairy cow should be considered simply a machine through which we pass a certain amount of fodder to be turned into lacteal fluid for the benefit of mankind. There can be no profit in animals that consume only the necessary food of support. The more they can consume, digest and assimilate above this, the more profitable. The other characteristic is in the fact that dairy animals should by no means be choice in the quality of their food. Cows that will freely consume the roughage of our farms and transmute it into valuable products—milk, butter, cheese, veal and beef—are more valuable than those which require a choice feed, or even the more costly commercial feeds.

**SIZE.**—As to the size of the Holstein-Friesian, the cows in ordinary milking condition at full age will weigh from 1200 to 1600 pounds, and occasionally cows may be found that exceed this weight. So as to size, you see, they will compare very favorably with the Shorthorn. No doubt size has an important bearing upon the economical production of milk and butter. E. W. Stewart, a noted writer on the subject of feeding animals, has laid down a general law that the food of support decreases proportionately with the increase in size of animals. Again, quoting from Prof. Roberts: "Somebody away back in the dim past laid down the rule that animals consume food in proportion to their live weight, but seeing this would never do, immediately added, 'other things being equal.' Can anyone imagine for a moment that two 1200-pound, well-built Shorthorn cows will consume as much as three coarse-headed, gothic-ribbed, 800-pound ones? The truth is, animals never consume in proportion to their live weight." Prof. Stewart said we must conclude that size—all other things being equal—is favorable to economical yielding of milk; that it actually takes less food to produce 100 pounds of milk, with a cow of equal merit weighing 1000 pounds, than with one weighing 800 pounds. Now, if you claim this is theory, let us see what actual practice develops. In various tests made by different experiment stations it has been found that the average net gain of cows of 1100 pounds and upward over that of 800 to 1000-pound cows varies from \$7 to \$12 in a season. These reported tests show that the food of support in comparison to size is much less in case of the large cows than in the small ones, and for that reason they return a greater net profit on the total amount of food consumed. We know of a herd where several breeds stand together in barns for months and years at a time, and never has the owner once thought of making any change in the quantity of the feed of the different sized animals. Do you breeders having a mixed herd, when you stable and feed in barn in winter, feed the larger cows more? I do not believe you do. Have we not seen small men who, it appeared, could outeat anything that walked, altogether out of proportion to their productiveness and the work we could get out of them? Some cows of one particular breed may eat more than certain cows of another breed, but as a general thing the average of a herd

of Jerseys will eat quite as much as the average of a herd of Holsteins.

**THE PRODUCT.**—Quantity of production and persistency of milking during long periods are well-known characteristics of this breed. An average animal at two years old will produce from 5000 to 6000 pounds of milk in ten months, and she will increase this production each and every year until at five years of age she will give from 7000 to 12,000 pounds. If fed to the extent of their ability to digest and assimilate food, the majority of these cows will exceed this production. Seventy-seven cows have been placed on the Advanced Registry of the Holstein-Friesian Association that have produced from 15,000 to 30,000 pounds in periods from ten months to one year. When it is remembered that, taking other breeds and their grades together with the common run of dairy herds, from 3500 to 4000 pounds of milk per annum is regarded as extremely high average for the cows of this country, it is seen that one Holstein-Friesian animal will readily take the place of three cows such as we now find scattered over this land. There are instances in which even a greater difference is manifested. I will quote from just one letter from a gentleman who has had over a quarter of a century's experience breeding and raising both the Jersey and Holstein: "Some eight years ago," he says, "I placed in one of the leading dairy barns of one of the largest dairymen in the State of Indiana twenty of my Holstein cows to take the place of eighty of his Jerseys. They gave for the next several years about the same amount of milk as his eighty Jerseys. I only speak of this," he continues further, "as an actual case, and perhaps an unusual and extreme one, but my whole herd of mature Holsteins would average through the grass season 60 pounds of milk per day, while my Jerseys would not average 25 pounds."

The writer of this paper has had Holstein cows which would give over 80 pounds—or ten gallons—per day, and heifers with first calf would give 62 pounds, and only running on grass and eating alfalfa hay. One can see the magnificent possibilities in these animals and a sure reward for the person who will take such a breed and develop its great productiveness.

**THE MILK.**—It is difficult to exhaust this subject, for there are so many instances at hand, but we know there should be a limit to any paper presented before an association of this kind. We might present facts and arguments showing the superiority of the milk of the Holstein cow for direct consumption, and quote from an article in the National Stockman to the effect that every physician of note maintains that normal milk properly balanced is far superior for food, especially for infants and young children, to milk that is richer in fat. Indeed, it is quite freely conceded that hundreds of Jersey calves owe their premature death to a surfeit of rich, new milk. Disordered stomachs, indigestion and scours are the result when such milk is fed to calves in excess. Again, we could, we believe, establish the fact that for making cheese no milk stands so high, nor can the Holstein cow be equaled in this industry. But we propose to present but one other quality of the milk of the Holstein, and that is by far the most important of all, namely, the value for butter production. Dairymen handling cows of this breed do not hesitate to admit that their milk contains a lower percentage of fat than the milk of the Jersey, the Holstein milk on an average testing 3.35% and the Jersey 4.50% of fat. There is an instance on record, it being official, of a Holstein cow testing 7.02%. But in view of the enormous production of milk they assert that the Holsteins average more butter per cow and that they produce a larger margin of profit.

**WHAT SHALL THE TEST BE?**—Prof. Henry of the Wisconsin Agricultural College states that it is his judgment, based on the results of the most carefully conducted dairy tests, that records showing 30 pounds or more of butter in seven days are unreliable. These parties may get something they call butter, but he is firmly convinced that a large part of these so-called records were not honest, merchantable butter. Private tests with dairy cows and those where the milk and butter are not analyzed are no more reliable than private trotting tests would be of horses, for human nature is the same in the owners of both these animals. The Babcock test, together with the scales, gives us a far more correct method of estimating the butter capacity of a cow than the churn itself. This is true because with these two instruments we can determine the total quantity of fat yielded by a cow in a given time, and when a cow has produced this fat she has done her part and is entitled to full credit. The churn is not a measure of a cow's butter producing capacity because fat may be lost both in separation and churning, and the cow can not be held accountable for either of these losses. Again, unless butter be analyzed it may not be a merchantable product, for which, again, the cow is not to blame; nor, on the other hand, should she have credit for water, casein, extra salt, or all of these, which the worker through his desire for a large production may leave in excess in the butter. The Jersey Association has just adopted these instruments and intends to begin new tests under the direction of experiment stations, but not yet have they any reliable tests of this kind that we can refer to, whereas

the Holstein-Friesian Association has long made these kind of tests their standard, and we have a long list to refer to. According to ex-Governor Hoard, the publisher of Hoard's Dairyman, reliable tests give us but one champion cow to date, a Holstein-Friesian. Her record is 29 pounds and 5.7 ounces of butter in seven days.

**CONCLUSIONS.**—But we do not need to go to these official tests to find out the product of a cow, or which is the more profitable animal. We do not care, nor is it profitable, to pick out certain isolated cases and expect them to be a criterion of what we may expect in a herd of either of these breeds. We find that the average Jersey will produce less than 20 pounds of milk per day averaging 4.5% fat, which will make for the day  $\frac{1}{10}$  pound butter fat. The average Holstein will give 40 pounds of milk per day averaging 3.35% fat, which will make 1.34 pound of butter fat per day—a difference in butter fat alone of .44—an equivalent of over  $\frac{1}{2}$  pound butter in favor of the Holstein. Again, when we take into consideration the extra supply of skim milk for calves and hogs daily, also the calves each year worth double the amount of the Jersey for veal or beef, and then, as a final disposal, when her years of profitable milking are over, you have an animal that will readily sell for twice the amount, it seems that anyone should be able to decide upon the more desirable cow.

We are sure that the Holstein will produce more milk per annum, more milk and beef, more milk and butter, more milk and cheese, than any other breed. We commend her to you. Take her and keep her pure. All improvement must emanate from within—you need look for none from without.

The subject is open and the advocates of other breeds are welcome to the floor. It is to the interest of everybody that the cows of the State should be more productive and profitable. There is more than one way to that result. Our own opinion is that we are not neglecting the Holstein cow so much as we are neglecting all good cows. A good discussion, representing all breeds, will awaken interest in improvement.

## THE SWINE YARD.

### The Growing of Swine.

By C. H. SESSIONS of Los Angeles, from the forthcoming report of the State Board of Agriculture.

There is no animal raised on the farm that will grow into money as quickly and with more profit than the hog, and it is a branch of farming that is very much neglected. In growing swine it is necessary to raise only those strains that will return the greatest amount of flesh in the shortest time with a given amount of feed.

**THE RAZORBACKS.**—In former years—and in fact at the present day—there can be found on many ranches in California numbers of the native Spanish hogs, or "razorbacks." They are a very hardy hog, but are not proof against the diseases of the more fashionably bred swine of to-day. They can take care of themselves and live in the swamps and river bottoms, but it requires two or three years for them to mature, ready to put on fat. Many farmers have dropped this breed and taken up the improved breeds of Berkshire and Poland-China; but there are too many of them left, and it appears that very little attention is paid to getting rid of them. When growing, they will take double the food given a well-bred hog, and require two or three times as long to get ready for market, and therefore it costs about four times as much to raise them.

Through careful selections and judicious breeding the Berkshires and Poland-Chinas are able to make rapid growth and attain a marketable size in from eight to twelve months. Many of the pigs weigh 200 pounds at six months of age, but it requires good handling to get such results.

**THE TWO POPULAR BREEDS.**—The difference between the two breeds named is not so great as in former years, but they both make good use of their food and put on flesh rapidly. The Berkshires carry a larger percentage of lean meat than the Poland-Chinas, and as the market generally demands this meat it makes them a desirable hog. Since cottonseed oil is being used in place of lard, there is not so much demand for the lard hog. Many large growers of swine prefer to cross these two breeds, thinking they have a hardier and better feeding hog than in the full bloods.

It used to be claimed that for large ranges the Berkshires were not a success, as they would soon become wild and hard to manage, while the Poland-Chinas were more quiet; but I believe the present strains of Berkshires have been bred on more quiet lines and are not so liable to grow wild and cross.

**HOW TO BEGIN.**—In taking up the raising of hogs, the first thing—and the most important—is to get good foundation stock. If it requires too much money to buy all thoroughbreds, be sure to get a thoroughbred male with a pedigree, and have him recorded and know he is from good strains.

For sows, take the best you can afford to buy, and



cross with the thoroughbred male. I have bred the worst specimens of "razorback" sows I could find with a thoroughbred Berkshire boar, and have been surprised to see the improvement of the first litters; then cross these young sows with another Berkshire boar, and this second cross produced pigs having all the characteristics of the thoroughbreds. The first cross showed a great shortening of the snout, and the second was as short as necessary. It may be timely to say here that it is generally believed that short-nosed hogs make better feeders than the old style long-noses, and in selecting sows this should be kept in mind.

A grade male will make no improvement in the herd, and should never be used, as he is liable to breed back to some inferior strain. Good animals can be had at \$25 and upward, and in a short time they will pay for themselves in the improved size and quality of the pigs which make them profitable feeders.

In selecting breeding animals it pays to visit the State Fair, where there are on exhibition the finest in the State. The visitor is there permitted to see the best of several herds, and he can compare the different specimens and select the type which he has in his mind. If not convenient to visit the State Fair, visit as many herds as possible, and see how they look at home, and selections can be made which would be more satisfactory than to order by letter, leaving the selection with the breeder.

The greater part of the thoroughbred business is done through correspondence, and generally satisfaction is given, as no breeder expecting to remain in the business can afford to take any advantage of the buyer.

**OTHER SUGGESTIONS.**—I would not recommend breeding animals under eight months of age, nor would I advise waiting until over a year old, as I have had poor success in getting sows with pig after that time. I have bred most of my stock at about eight months, and they have generally made good breeders and good, large-sized animals. If bred too young, they are liable to be stunted and will always be small.

Great care should be used in handling breeding stock. Do not allow them to get too fat, or the litters will be small and weakly. If possible, give them a good range, and they will hunt out the grass, roots and all.

Some object to allowing the hogs a pond hole for a wallow, on account of danger of disease, but I do not think such fears are well founded. They certainly enjoy a bath in the thick mud, and it makes them far more comfortable on a hot day. These water holes can be disinfected with crude carbolic acid or preparations made for the purpose, and in rolling the hogs get covered with the mud, which kills lice, if they have them.

If the hogs are kept confined, the pens should be disinfected often and kept clean. A coat of whitewash twice a year is good.

In case of sickness in the herd, remove the healthy ones to fresh pens, leaving the sick ones in the infected pens, and then begin a course of scraping and cleaning out, washing everything with disinfectants.

Give as much green food as possible, and in case of sickness they will be more likely to recover than if fed on an entire grain ration. There is no better food than skimmed milk and a little corn meal or ground wheat. The latter makes an excellent food for young pigs, and if it can be had at a fair price I think it is better than barley for the older ones. Pasture is always good if it can be had, but, if not, fresh-cut alfalfa should be given them daily.

## THE POULTRY YARD.

### Removed from the Brooder Too Soon.

**TO THE EDITOR:**—I have recently moved some young chicks, from two to three weeks old, from an out-door brooder to a new fowl house, 12 by 6. Owing to a difference in temperature they "bunch" at night to keep warm, thereby crushing one or two which get underneath. Is there any remedy for this "bunching," as I have already lost five good chicks? The house is on a slight slope and faces due east.—B. L., Penryn, Cal.

**TO THE EDITOR:**—"Haste makes waste." These chickens were too young when they were removed from the brooder to "a new fowl house." They huddled together for warmth, and some, quite naturally, smothered. It is an oft repeated story. Chickens two or three weeks old are too young and tender to be deprived of the warmth of a good brooder. Chicks much older than these will smother if great care is not used. One needs to have great care in this particular.

Until chicks are well feathered they must have warm quarters, with good ventilation. When placed in the cool brooders see that all corners are made as rounding as possible by placing wide, tall boards across the angles. Unless this is done the chicks will often crowd until they form a packed mass, and then there will be smothered chicken in abundance.

Great discretion must be exercised in this matter. It pays to provide comfortable quarters for chickens. They must be gradually hardened until, at eight or

ten weeks old, they are placed in roosting coops having abundant ventilation.

There is danger of having too many chicks in the cool brooders. B. L. will have to learn, as all who raise chickens must, at one time or another, by experience, often bitter. It is hard schooling, but one is apt to forever keep it in remembrance.

To prevent crowding in roosting coops a good plan is to nail onto the roosts short pieces of board—say 4 inches wide, projecting above the roosts 3 or 4 inches. These will keep the chickens some distance apart.

There is no limit to the details connected with poultry raising, each of which has to be rigidly observed if success is to be attained. A vigilant eye, a spirit not easily discouraged, perseverance and "pluck" are all needed.

A. W. ROBINSON.  
Napa.

## THE DAIRY.

### Up-to-Date Dairy Topics.

In his recent address at the Massachusetts Agricultural College, Major H. E. Alvord, chief of the dairy division of the Department of Agriculture, touched upon some very recent dairy subjects in a very entertaining way.

**SKIM MILK.**—The waste or by-products of butter making constitute an enormous amount and in creamery management much of the success of the creamery depends on the economical use of the by-products. In the West, more than in the East, patrons do not generally value skim milk sufficiently, and will take almost any offer for it rather than take it home. This applies particularly to creameries where the whole milk is drawn to be separated. There is quite a market for skim milk in the arts. It is dried and used in making a low-grade glue for paper sizing, wood filling, oilcloth and as the base of some paints. For this purpose, producers get only about 10 cents per 100 pounds for their skim milk. It is also used for making calf foods, and in a dry state for making human food. In this form it is bought and used largely by bakers and for this purpose brings customers from 15 to 20 cents per 100 pounds.

An owner of cows should be able to get over 20 cents per 100 pounds for his skim milk at home. Our experiment stations have shown that for feeding young and growing stock one can get more than 20 cents per 100 pounds for it when it is rated with other foods. At present feed prices, it should be worth from 25 to 30 cents. I would use the greater part of it in its natural form for human food. It ought to be worth half as much as 4% milk. For household purposes one can get out of it more than half the value of whole milk. For best and most economical results it must be used fresh and sweet. It never should leave the farm, and I am and always have been opposed to hauling whole milk to the factory and then skim milk back again. It is a distinct advance in factory management to have an extension of farm separators. The cream gathering plan is coming to the front again, either with the use of farm separators or many conveniently located skimming stations.

**OLEO.**—Quality in butter, to assist in marketing it, is the only weapon we have to safely, satisfactorily and successfully compete with butter substitutes. First quality butter is a safer reliance than legislation. We may expect that the enforcement of a law will practically drive colored oleo out of the market, but the uncolored oleo will be used and sold for what it is. It can be sold for half or two-thirds the price of good butter, as is now done abroad, and, if this is done, two or three times as much as is made now will be sold within five years. The only way to counteract this is to make a better quality of butter.

**PASTEURIZATION.**—Pasteurization is now the fad. In Denmark over 90% of the butter is made from pasteurized cream and some Western creameries are using it. Pasteurization was adopted and advocated in Denmark, not for the improvement of the quality of butter, but on the ground of public health, because of the prevalence of tuberculosis in cattle. Through the admixture of skim milk at the separator stations, germs of tuberculosis were being distributed from infected to healthy herds and it was to avoid this that a law was passed requiring the sterilization of the skim milk. It was found more economical to pasteurize the whole milk before it was separated. This destroyed the bacteria which ripens the cream, so that it was necessary to introduce artificial cultures or starters.

**FLAVORS AND STARTERS.**—Previously there were many kinds of flavors, but the effect of the use of artificial starters was to bring about a greater degree of uniformity. In this the Danish butter differs from that of the United States, as it is very uniform in quality, but is lacking in flavor or has a low flavor, and would not sell for first-class creamery butter in New York or Boston markets. Our butter is much higher in flavor, but more varied in character. The necessity has not arisen in the United States for the adoption of pasteurization.

In regard to the export experiments in butter conducted by the Department of Agriculture for several

years, we engaged from four creameries 1000 pounds butter each a week and sent this to Manchester and London. The results have been satisfactory. Half the milk from which this butter was made was pasteurized and an artificial starter used to ripen it. The other half was made in the natural manner. Private marks were put on the tubs to know which were pasteurized and which not, and it was then sent to the best butter dealers abroad for sale. They did not know which was the pasteurized butter. When their reports were made, we checked them up and found that sometimes the pasteurized butter was ahead and sometimes behind. At the end of the year the returns were a little in favor of natural butter.

Our most popular butter judges have gone wild on flavor and forgotten that there is such a thing as body in butter. At a recent Northwestern butter convention the gold medal was given to a tub of butter which forty-eight hours later was not fit to eat. The butter maker knew when he made it that it would not keep. Many butter makers are adepts in the art of keying up their butter so that it will have a high, flashy flavor at a certain time. They do this in order to win prizes, not caring whether or not the butter will keep. I would urge moderation in flavor and that butter makers strive for a persistent, unvarying flavor. We used to have this at its best in New England dairy butter packed in May and June. Butter makers should pay more attention to body, grain and mechanical condition. It is the body of butter that determines primarily the keeping quality. Only a small per cent of butter is consumed within a fortnight after it is made.

### The Central Coast Convention.

The convention of delegates from local boards of trade and improvement clubs in the seven central coast counties, which met and completed its labors of organization of the Central Coast Counties Improvement Association at San Jose, May 29th, was marked by absence of any "programme" in the objectionable sense of the word, by hearty good feeling of its members each toward all, and by unanimity of action. The outcome was a simple and sensible constitution and business-like action on the various subjects dealt with. The constitution, which we think may well be taken as a model for similar organizations that may be formed, provides, among other things, for a body composed of at least two delegates from each improvement association in each county and part of another one covered, and for an additional delegate for each fifty members over 100, in each such local association, for a board of control consisting of the general officers and the vice-presidents, for a per capita payment of 5 cents per month from each member of a local association, and for additional funds as may be voted from time to time by a majority of the membership of local associations, that all liabilities incurred shall be for the benefit of the whole territory represented, that all literature issued under the authority of the Association shall give representation to all organizations, members of the general body, and that exhibits shall be credited to the section from which they come.

San Mateo City was selected as the next place of meeting of the Association on the third Thursday of August. The officers selected are:

President—Victor A. Scheller, attorney of San Jose, at present president of the Santa Clara County Improvement Club.

Vice-President at Large—Duncan McPherson of Santa Cruz, editor of the Sentinel.

Vice-Presidents from counties, as provided by the constitution: Santa Cruz county—F. J. Coop, secretary of the Board of Trade of Santa Cruz City.

San Mateo county—F. H. Thorpe, attorney, of Redwood City.

San Luis Obispo county—G. Webster of San Miguel, attorney.

Santa Clara county—R. B. Roll of Santa Clara, president of the Santa Clara Commercial League.

San Benito county—Samuel R. Canfield, orchardist, of San Juan.

Monterey county—J. E. Steinbeck, manager of Sperry Flour Co., Salinas.

Secretary—Charles A. Ricketts of San Luis Obispo, chairman of the San Luis Obispo Board of Trade and manager of the San Luis Obispo Implement Co.

Assistant Secretary—Ira B. MacMahill of San Jose, at present assistant secretary of the Santa Clara Improvement Club and manager of the San Jose Telephone Directory Co.

Treasurer—The Bank of San Mateo County, Redwood City.

There were nearly seventy delegates present, representing all the counties in the district except the portion of Santa Barbara county lying north of the mountains.

**SAN JOSE, June 4.**—The California Cured Fruit Association's annual meeting brought 1100 members. Eighteen hundred votes were necessary to a quorum for business. A resolution was passed asking the board of directors to adjourn from day to day till the requisite number of votes was secured, and, in the failure to obtain a quorum, the present board of directors to remain in office for another year.



## Agricultural Review.

### ALAMEDA.

**PROSPEROUS SHEEP RAISERS.**—Livermore Herald, May 31: During the past week or two our resident sheep men have experienced an unusual run of business and more prosperity than for a number of years past. The season has proven a favorable one for their special interests, and the demands of the city markets, together with the upward tendency of prices, has brought on renewed activity in their line of business. About this time each season the breaking up of the camps occurs on the various ranges in the hills about this section, and the flocks removed to the San Joaquin plains, where they are put in condition for the city markets. Drovers of early lambs have been passing through Livermore nearly every morning for a week past for shipment to market. It is ascertained from authentic sources that about \$16,000 has changed hands so far this season. The largest sale probably was made by E. P. Tryon, whose range is close to Tesla. He sold 1800 head of early lambs to a San Francisco firm. Frank Kelly and Patrick Connolly also sold 1800 each. Peter Moy disposed of 1500. Messrs. John Kelly, Jas. Gallagher, John McGlinchy and Pat Callaghan disposed of various lots from their flocks. Twelve carloads were taken to the city last week and eighteen cars went below on Monday of this week. Advanced prices were paid for choice lots of early lambs, which were bought at \$3 per head. Peter Moy will remove his flock of 7000 head from Cedar mountain to Sargent's ranch in San Joaquin. John McGlinchy has purchased 800 head from Pat Connolly, which he will add to his flock.

### BUTTE.

**WOMEN THINNING FRUIT.**—Chico Record: On the Bidwell ranch there are employed several women and young ladies in thinning fruit, and it is said that their service is very satisfactory. While it is necessary for them to work from ladders they have male assistants to carry ladders for them. They work quickly and faithfully.

### LOS ANGELES.

**APRICOTS SUFFER—ORANGE SEASON ENDED.**—Pasadena Star: The damage done by the recent winds is not at all serious so far as the orange crop in and about Pasadena is concerned. The apricots, however, suffered somewhat from the winds. Indeed, so far as oranges are concerned, everything is about cleaned up locally. About twenty carloads of Valencias are still to go out from here, which will end the season's shipments.

### LASSEN.

**CROSSING THE SUMMIT.**—Red Bluff People's Cause: There were 540 head of the Cone cattle taken over the mountains last Thursday to their summer range in this county. Snow was found to be 4 feet deep in some places and it was a hard job getting the cattle over the summit. The snow, however, is fast disappearing, and in a short time all the Paynes creek cattle will be taken up.

### MODOC.

**CATTLE WINTER WELL ON THE LAVA BEDS.**—Alturas New Era: O. E. Dyger, foreman for Churchill at Tule lake, states that 4000 head of cattle wintered in the lava beds last winter without being fed, and they killed fine beef from the bunch in March. He reports that Charles Caldwell, with a crew of men, were now at the lava beds with a well boring machine, operated with a gasoline engine, boring for artesian water. If Mr. Caldwell succeeds in getting water the lava beds will be one of the best cattle ranges in this country, as the bunch grass stands knee high there all summer. The mountains are all well covered with a white grass, which affords excellent feed for stock, so that grazing will be fine on the high mountains as well as on the dry prairies.

### NAPA.

**MIXED FARMING.**—S. J. McFarland has 350 acres, about 200 of which is rich valley land, 7 miles north of Napa, devoted to grain and hay for the stock kept on the place. Milks nearly 100 cows on the average. Young and old, they produce more than one pound of butter each day throughout the year. Also purchases enough cream of neighbors to make the daily churning average 250 pounds. Receipts for butter amount to between 30 and 40 cents per roll of two pounds.

### ORANGE.

**BEANS, BEETS AND CELERY.**—Santa Ana Blade: On the San Joaquin there is said to be about 4000 acres in beans, all of which is looking well, and with a little more moisture would be all right. Beets are looking well in damp lands or where the land can be irrigated, but at Los Ala-

mitos and elsewhere in the county on dry land the yield will be very light unless the crop is irrigated in some manner. It is much too early yet to make any estimate on the celery crop, but the seed beds are well stocked with thrifty, well grown plants, and conditions so far are favorable for the planting of the crop.

**NEW BEET HOE.**—Santa Ana Blade: A device for thinning beets has been invented by a couple of Oxnard men and is said to do the work better than anything else heretofore tried. It is a small device made of steel, which is fastened to the hand by means of a strap around the wrist, thus leaving the fingers free.

### PLACER.

**SPLENDID GRAIN CROP.**—Auburn Herald: Ed E. Hill, deputy sheriff of Lincoln, says the grain outlook in western Placer is the best in many years. There will not be as much hay cut as usual, for the reason that farmers are letting it stand for oats, for which they are now being offered \$1 per hundred.

### RIVERSIDE.

**HARVESTING WITH BIG BARNEY.**—Press: Charles and Thomas Kerr of Armada are conducting a campaign with "Big Barney," and they calculate to harvest 4000 acres. Their early hay is nearly all cut. They have averaged sixteen men in the field, and 150 acres each twenty-four hours with five mowing machines—75 acres day work and 75 acres at night. Four to five teams have been stacking, using header wagons to facilitate the unloading. Thomas Kerr studied out the use of chicken wire netting as a lace on the wagons. The netting is about 16 feet long, with poles across each end of the netting. This netting is laid across the bed of the wagons, the poles falling over the sides of the wagon to give length by which to handle, and the wagons are loaded heavily. At the stack ropes are fastened to the upper pole and a team attached, and the load pulled off onto the stack at one haul. The netting is easily shaken loose from the load and replaced on the wagon.

### SAN BERNARDINO.

**GOOD PROSPECTS FOR CHERRY CROP.**—Times-Index: Ripening fast are the luscious cherries that are hanging on the trees in the San Bernardino valley and with the continuation of the warm and sunny weather that has been prevailing for so many days, the crop will be ready for picking soon. The cherry crop of this valley this season will be a good one and from all indications will exceed that of last year. The crop generally is in excellent condition. "We will begin picking early in June," said Howard Andrews, foreman at Gregory's packing house, who with his brother owns the Mount Carmel ranch at Yucaipa. "The Early Richmond and Governor Wood will be the first varieties to be taken off the trees, and a little later the Black Tartarians and Royal Anns will be ready."

**HONEY CROP WILL BE LIGHT.**—Highland Messenger: H. B. Perdue of Gregory's packing house recently made a trip to all the apiaries from Highland to North Ontario, and he reports the honey crop this season very light. Mr. Perdue said that in January and February the outlook for a good crop of honey was first-class, but sufficient late rains did not come to make the sage, on which the bees depend for their honey to keep up its growth, and he states that the crop will be about one-half or possibly two-thirds of a full output. He imparted to us an incident of his trip which to us seems worthy of publication. He was in the neighborhood of Etiwanda when he came on to a bee rancher trapping wild bees. The apiarist had some forty stands located around in the sage brush and every day he made a trip of inspection. If a stand contained bees he loaded it on his wagon and replaced it with an empty one. In this manner he had caught in two weeks fifty hives of bees.

### SAN JOAQUIN.

**MELONS LATE THIS SEASON.**—Lodi Sentinel: The Lodi watermelon is late this season and will not make its appearance until the month of August. The cold weather has kept it back, and as a consequence the Fresno melon will appear on the market before the Lodi product.

**SMALL FREAK CALF.**—Lodi Herald: A freak in animal life may be seen on the river bottom ranch of R. F. Green, 3½ miles east of town. It came into being recently and is the first born of a two-year-old spotted cow. In form it differs little from the ordinary calf, but in looks and action it is as much mule as anything else. The eyes and mouth resemble those of a mule colt. A mule's ear appears where one horn should sprout and the other side of the head in time will be ornamented with a horn. The two rear hoofs are cow-shaped, while the forward ones conform to the hoof of the mule colt. Its tail is inclined to be on the mule order,

but is about double the ordinary length. A striking feature of the little freak is its voice. The tone does not harmonize with the plaintive bawl of the calf nor is there detected in it any of the melody or volume that belongs to the mule. The mother of the strange-appearing offspring, however, seems to understand everything it says, and is as devotedly attentive as a cow could be. Mr. Green says that early last fall the cow, with a number of other head of stock, strayed across the river and remained away visiting for a day and a night. While driving them back, the mother became entangled in a barbed wire fence, and it was several hours before she was got out of the difficulty, nearer dead than alive.

### SANTA BARBARA.

**LIGHT HAY CROP—LARGE ACREAGE OF LIMA BEANS.**—Goleta Correspondence to the Press: Hay cutting is in full blast. The clatter of mowing machines is heard on every hand. Several farmers are running a string of three machines. But for all the activity the hay crop is very light. A large acreage is planted in Lima beans, most of which are above ground and growing finely.

**LOMPOC SECTION DAMAGED.**—Lompoc Record: The most damaging wind to crops visited this section on Saturday and Sunday last that has ever been experienced by the colony farmers. In fact, an entire week of bad crop weather has prevailed, with ruinous effect on crops—so much so, that any hope of their recovery from total loss in many cases is about abandoned. Especially is this the case with much of the mustard crop that at one time was believed to be the most promising, and which, had this bad spell not have come, might have given off the cost of production at least, notwithstanding the scarcity of late rains. The late sown barley and oat crops will go into hay where it will be worth harvesting, and the balance be made pasture for stock. The effect on the bean crop now in cannot be judged, as the land was kept in prime order up to date and all moisture possible consumed.

### SANTA CRUZ.

**"STEM RUST" ON NEWTOWNS.**—Pajaronian: Horticultural Commissioner Rodgers informs us that last winter he sent several specimens of Newtowns having "stem rust" to persons connected with the State and United States agricultural work, and no one was able to determine the cause of the rust. Buyers of long experience in California and other States say that "stem rust" appears on Newtowns wherever grown for several years.

**BIG RHUBARB AND FINE ASPARAGUS.** A shipment of rhubarb, contributed by the G. M. Bockius Co., and a shipment of asparagus, contributed by N. M. Struve, were forwarded to the State Board of Trade by the Pajaro Valley Board of Trade this week. The rhubarb was of mammoth size and probably the largest in the State, and the asparagus will make the up-country growers think that Pajaro valley can be a formidable competitor when she wants to be.

### SHASTA.

**A HEAVY CROP.**—Cottonwood Enterprise: About twenty acres of the farm of H. C. Ford, located a short distance west of Cottonwood, were sown to barley and oats, and is now probably the heaviest crop of grain in the county. It is all on upland and the grain stands about 6 feet high. Part of it is in an orchard and is heavier grain than that adjoining, which may be accounted for when it is remembered that orchard land has the advantage of cultivation. The yield of hay from this crop is estimated at from three to four tons per acre.

**REDDING HORSES WEAR HATS.**—Redding Searchlight: Nearly all of the delivery horses in town are wearing hats such as are worn by the horses in the East during hot weather. The hats are made of light straw and fitted over the ears of the animal, there being openings for that purpose. In the top of the hat is a place for the storage of a sponge to further cool the animal's head.

### SONOMA.

**UNDER A HAY RAKE.**—Santa Rosa Press-Democrat: Marino Lafranchi took a horse to the Charles Ayres ranch to get a sulky hay rake. He was returning with it to the Lafranchi ranch when the horse became restive and kicked. The animal's hoof struck Lafranchi's leg with such force as to fracture the bone. Despite his injury the young man managed to jump from the seat and grab the horse to prevent a runaway. Lafranchi called for help and L. Bianchi came to his aid. Lafranchi warned Bianchi not to attempt to get on the seat and drive the horse or a runaway would be inevitable. He did not heed the warning, but mounted the seat and started the horse. The animal gave

a sudden dash forward and dislodged the driver. He fell beneath the rake and was dragged a considerable distance. Fortunately there was a ditch in the path of the runaway. The horse cleared it at a bound and the boy rolled into the ditch, the teeth of the rake missing him by a narrow margin. In this manner he was saved from almost certain death. The rake was badly demolished.

### SUTTER.

**BEES AND CHERRIES.**—Independent: P. L. Bunce, who owns one of the largest cherry orchards in the vicinity of Yuba City, has for two years allowed several hundred stands of bees to be placed in his orchard for fertilizing the cherry blossoms. The bees are certainly beneficial to the crop, for both years his trees have borne heavily. Previous to this experiment with the bees, his trees bore light crops.

### TULARE.

**PEAR TREES AFFECTED WITH BLIGHT.**—Visalia Delta: Special Agent of the State Board of Horticulture John Isaac was taken for a drive through the different orchards east and south of Visalia Wednesday by I. H. Thomas, and, much to the surprise of many, found orchards affected with pear blight. During the day of travel over fourteen orchards were visited and not one was found to be free of the disease. Some are worse than others, but it is the opinion of Mr. Isaac that all will eventually become diseased. The blight in this district appears to be of a more serious form than in many other sections of the State where it is found. The fruit trees, other than the pear, were found to be heavily loaded with fruit, and give promise of a large crop. Mr. Isaac and Mr. Thomas consumed Thursday in traveling through the northern part of the county and viewing the orchards there. The route traveled by them was from here to Orosl, to Sultana, Monson and back to Visalia. Wherever pear trees were found, blight was very much in evidence. Mr. Isaac stated that the entire valley is affected with the disease. He further stated that the pear crop was lost for this season, though a large harvest of other fruit will be reaped. There are fewer insect pests this year than usual. The peach, apricot and prune prospects are especially good, with a fair crop of almonds. The olives in this county give promise of an enormous yield.

**CROP SALES.**—E. C. Miller has sold his crop of prunes now growing in his orchard to Walter Rouse at \$18 a ton. Estimated yield, 100 tons. H. J. Rouse has sold his 20-acre prune crop for \$2500, and John Zimmerman has sold his for \$2100. All are in the vicinity of Visalia.

**AN OBJECTION TO SORGHUM.**—Register: While as a food product sorghum can not be beaten, and will yield immensely, we find the cultivation of that forage plant objected to on the ground that it is almost impossible to get the roots out of the ground. They stool out so and fasten onto the earth so hard that it is impossible to separate the earth from the roots, and next to impossible to dry the roots out so that they will burn, even if plowed out and knocked to pieces, with success; and it is averred that if one corner of the root pile touches the earth the roots will grow and keep green. It is the afterclap that some men who have had experience with sorghum complain of.

### VENTURA.

**SORRY THEY CUT THEIR GUM TREES.**—Oxnard Courier: On Sunday began a terrific west wind, which continued through Monday and did considerable damage to the bean crop over the county. In every locality here and there spots were blown out, making probably a total of 400 acres, all of which will likely be immediately replanted. The wind was the worst that has occurred at this time of year for a number of seasons, and some of the farmers who have been cutting out their eucalyptus windbreaks will let them grow up again.

### YOLO.

**FINE CABBAGE.**—Davisville Enterprise: F. E. Russell brought to Davisville last Tuesday a wagonload of as fine cabbage as one could wish to see. The heads were large, firm and crisp and were grown without irrigation. The same thing can be done nearly anywhere on the banks of the Putah.

**LARGE BERRY YIELD ON SMALL ACREAGE.**—W. S. Montgomery has an excellent almond and apricot orchard, but what we wish to call attention to in particular is his berry patch. He has one windmill, which, besides supplying water for a flower garden also furnishes water for the berries, and from an eighth of an acre the family gathers several hundred quarts during the season, or, in other words, enough strawberries, raspberries, blackberries and gooseberries for the year.



## THE HOME CIRCLE.

### The Planting of the Rose.

Written for the PACIFIC RURAL PRESS by  
LILLIAN H. SHUEY.

The harvest has its bounty,  
The laborer has his dues,  
But that which is for beauty's sake  
The joy of life renews;  
He serves his country nobly,  
Who plows, who tills, who sows,  
But this as well is worthy,  
The planting of the rose.

The rose to grace the banquet,  
The rose to deck the bride,  
Strewn roses for the hero  
With honors multiplied;  
On life, on death, on joy or grief,  
This flower its wealth bestows,  
He grants to all who gives to earth  
The planting of the rose.

The soldier sad on fevered couch  
Lifts up his eyes to bless  
The fragrant bud held up to cheer  
His pain and loneliness;  
Across the seas and far away,  
His quickened fancy goes;  
He's home again with mother, and  
The planting of the rose.

The rudest, lowliest cottage  
'Neath California's skies  
May shine with glorious beauty  
And tints of Paradise;  
Aglow on roof and gable,  
Aglow in garden close,  
The blossoms bright that never fail  
The planting of the rose.

Blest is the patient mother,  
The wife or maiden sweet,  
Who trains the vines and hedges  
Along the village street;  
For queens could do no better,  
Nor rarer trust disclose—  
'Tis love of home that orders  
The planting of the rose.

We dub the roses heroes, queens  
And fair and noble dames;  
The memories most proud and pure  
We cherish in their names.  
Because it o'er our homely lives  
Such grace and beauty throws;  
Our hearts, our homes and heaven keeps  
The planting of the rose.

Sheridan, Cal., April 28, 1902.

### The Old-Fashioned Woman.

Mercy on us! I do hope nobody will recognize me. If they get even a suspicion I'm sure I'll be investigated and get my photograph in the papers. Twenty years ago, perhaps, I wouldn't have minded the picture so much. But now!

Why, only the other day the madam chairman of the department of mediæval art of the Motinus Woman's Club called and asked me to prepare a paper on the "Influence of the Napoleonic Era on the Germanic Cathedrals." I just laughed. Really, I couldn't help it. Then I told her that if she wanted a recipe for making sweet potato pies or suet pudding I'd be glad to copy it off for her, but as for the influence of something or other on something else—whew! I was too old in the first place.

She sort of smiled and said, "Why, I believe when it comes to the question of woman that you belong back in about the fourteenth century or maybe in the fifteenth."

Goodness me! I expect I do. I just joined the club in the first place because I wanted to be sociable and didn't want to be standoffish. John teased me about it, too. Told me that this was the chance for me to get all my wrongs righted, and that if I felt I was down-trodden and oppressed this was my opportunity for freedom. Now, I always could make John do anything I wanted to, and the idea of my being down-trodden sort of made me mad. So I joined. I'm glad I did, too. Things are sort of different from what they were when I was a girl, and I'm glad to know it and find out about it all. But they really oughtn't to expect me to read papers about mediæval renaissances and things. I'll go and listen, but I can't write one of them at my age.

My! I don't suppose I'll ever catch up. You see, when John and I were married we had so few advantages compared with what women have nowadays. I didn't have a bit of help in

the house until after our first four little ones were born. When I see the children of the present generation out under the charge of a trained maid in a white cap, dancing up and down and singing "Little Birdie Goes Like This," I realize just what they missed. And yet I can't think I should be blamed altogether because I had never been taught to read German and didn't know the truly philosophical theory of bringing up children. Of course, you know the present approved theory is that "the will of the child must never be thwarted." They carry it rather to extremes now and then, it seems to me. I was told the other day about a professor and his wife who have brought their children up on that principle. He even goes so far as to meet his children on a perfectly equal basis, he calls it. That is, he allows the children to call him "Tom" just at his wife does.

Well, the other evening some friends of mine went out to call at the professor's house. The professor and his wife sat down with them in the reception-room and for half an hour they talked quietly. Then one of my friends was startled by a big drop of water falling on her nose. She looked up and saw the water had soaked through a large part of the ceiling and was dripping down on the floor. As a matter of course, she called the attention of the professor to what was happening. Just then there came a call in a shrill childish voice from the top of the stairway.

"Tom, Tom," called the child, "come on up here and mop up this water before the old lady gets on to us."

After all, if you judge by results, I can't say that I'm particularly ashamed of myself. Frank, that's my oldest, is the president of a bank out in Seattle, and John, the second, is lawing it in York State. Ed—he's the baby—hasn't made as much money as the other two, but he always was just a little bit the best of the lot. No, I don't mean best, either, but he's the kind of a son you'd sort of pick to go and live with when you got old if anything happened to you. You understand what I mean.

But children—that wasn't all the fun I had when I was a young woman. There was the housework to look after. Of course, I had a woman come in on Mondays and Tuesdays to do the washing and ironing, but I never had a regular hired girl until after John sold the grocery store. And I can't say that I ever found any of 'em was much real comfort. The best one I ever had was old Bill Brown's girl—he's the man that furnished us with butter for more than twenty years, until he got rich, sold the farm and moved into town. He lives right above us now, on the next block. But his girl, Jennie, was swifter than he was. Ten years before Bill moved in she allowed that farming was too slow for her and she came in and went to work for me. She was a fair cook—never more than that. On company days when I wanted to make a special showing I always had to go out and cook the desert myself. And on pies and suet pudding there aren't many that can beat me now. Did you ever taste one of my—

Jennie? Oh, she was all right. Of course, Jennie never had the interest in things that I had. It didn't make any difference to Jennie whether all the scraps were used up or not. And I never let her have anything to do with the children. Had my hands full to keep from thwarting their wills and keeping them jumping the way birdie does. But Jennie was all right.

I remember the first time young John's wife came out from York State to visit us. I introduced her to Jennie and she didn't know what to make of it. But that wasn't the worst of it. You see, after Jennie had put all the dishes on the table she always came and sat down in her place, like the rest of the family. And so one day, after she'd been home at least a week, John's wife came to me and said: "Mother, don't you know you oughtn't to have your maid eat at the same table with the family?"

"Oughtn't I?" I said. "Well, for goodness sake! I've been having her at the same table for fifteen years, and I never knew it before."

Now, John's wife didn't mean a bit of harm. She was just as good-hearted as a girl could be. But that was the way she was brought up. You see, really, it was my fault. I was 'way behind the times. But Jennie just kept coming to the table with us all the time John's wife staid, and afterwards, till her pa moved into town himself. Then she went home. I told you they were living up on the next block to us. And that same Jennie, why she's the secretary of the Motinus Woman's Club. Wouldn't I feel small now if I'd asked her to eat at some other table—out in the kitchen, maybe, or the backyard? Anyway, I don't believe it did Jennie, or John's wife, or me a bit of harm.

And when John's wife went to go home she came down to bid us all goodbye. She kissed me and father, and then she went to shake hands with Jennie. But Jennie wasn't to be put off that way. She just up and kissed John's wife a sound smack. She knows a lot better now, of course, being the secretary of the Motinus Woman's Club, but in those days she just up and kissed any woman that she took a good, kind-hearted interest in. Wasn't it dreadful?

You say I started out to tell you about my career? Why, I haven't any. Not a bit of a career—that I know of. I've just lived along here for the last forty-six years, doing the best I could by everybody—most of the time. Occasionally, of course, I've had my spits and spats.

But I'm ready to forget all that sort of thing, and I hope I'm forgiven, too. I wish there was something real exciting I could write about it. But, you see, there ain't. Not a thing. Of course, it was exciting there for awhile when three of the children had the measles at the same time, but we pulled them all through, so there's nothing to say about that.

You should have picked out somebody else. I'm just a plain and mighty uninteresting old woman. That's all.—Chicago Tribune.

### The Art of Letting Go.

We held on to a great many things last year which we should have let go—shaken off entirely. In the first place, we should expel from our minds completely the things which cannot be helped—our past misfortunes, the trivial occurrences which have mortified or humiliated us. Thinking of them not only does no good, but it robs us of peace and comfort. The art of forgetting useless things is a great one, and we should learn it at any cost, says Success.

It is just as important to learn to let go as to hold on. Anything that cannot help us to get on and up in the world; anything that is a drag, a stumbling block, or a hindrance, should be expunged from our memory. Many people seem to take a positive pleasure in recalling past misfortunes, sufferings, and failures. They dwell upon such experiences, and repaint the dark pictures until the mind becomes melancholy and sad. If they would only learn to drive them out, and banish their attempts to return, as they would banish a thief from the house, those painful thoughts would cease to demand entrance. We want all we can get of sunshine, encouragement, and inspiration. Life is too short to dwell upon things which only hinder our growth. If we keep the mind filled with bright, hopeful pictures, and wholesome thoughts—the things only which can help us on and up in the world—we shall make infinitely greater progress than by burying ourselves in retrospection.

One of the first lessons in life is to learn to be absolute master of one's own mind, to clear it of its enemies, and to keep it clear. A well-trained mind will never harbor thoughts inimical to success or happiness. You have the ability to choose your mind's company; you can call up at will any guest you please. Then why not choose the noblest and best?

"POOR MAN," said the inquisitive old woman, "I guess you'll be glad when your time is up, won't you?" "No ma'am, not particularly," replied the prisoner. "I'm up for life."

### Demon Dandy.

During his visit to the Huntingdons he had fallen hopelessly in love with the beautiful and imperious sister of his host. It was the night before the sale that the subject of the Offington horse sale was broached by Huntingdon.

"I see they are going to put up that brute Demon Dandy," he began, innocently.

"Why brute?" queried Diana. Bellairs, for her benefit, recounted the history of Demon Dandy's exploits.

When he had finished the harrowing recital with a thrilling account of how Demon had besieged a stableman in the loft for a space of twelve hours, how he had kicked two loose boxes into matchwood in the same space of time, Diana Huntingdon lifted her glorious dark eyes to his.

"I think I should like to buy that horse," she said.

"My dear Diana," expostulated her brother.

"Don't think of it," said Mr. Bellairs. Diana had a will of her own. This slight but ill-timed opposition called it into life.

"I'm sure I should like to buy that horse," she reiterated, with a rousing color.

More opposition followed from the men.

Her brother grew angry at the idea, while Bellairs, who would himself mount and ride anything between a buck-jumper and a zebra, grew alarmed and almost angry with her, whom he worshiped in private as almost a divinity.

"I am going to buy that horse," said Diana Huntingdon at last, with an angry flash in her eyes.

Then out of his love and fear for her Bellairs forgot his manners, which, as a general rule, were perfect. Worse still, he also forgot diplomacy.

"I don't think you will succeed," he said, coolly.

Then a hot flush came up from his boots, till he blushed in agony to the crown of his head.

"Indeed?" replied the girl, with a note of scornful interrogation in her voice that caused his heart to sink within him.

"I am thinking of buying him myself," said Bellairs, desperately.

"Indeed?" replied Diana, with an almost imperceptible lift of her eyebrows.

"To shoot—" explained Bellairs.

An angry flush crept across her face as she swept from the room, gazing angrily before her.

"You're quite right, Jack," said Huntingdon, sympathetically, as his friend returned disconsolately to the table. "But I'm afraid you've upset Di; she's a bit short-tempered, you know. Do you really mean to buy the brute?"

"I do," replied Bellairs, "and to ride him, too."

And he did.

Diana did not appear at the sale the next day, neither did she put in an appearance at the dinner table. Wherefore, in the evening, Mr. Bellairs ordered the dogcart, bade his friend farewell, and returned to his home with a sorrowful heart.

A year elapsed and found him still sorrowful.

All his male friends declared him to have become a misogynist, while all his acquaintances of the softer sex, who might have been his friends but for this painful peculiarity, declared that he was a heartless brute.

The peculiarity was made all the more unbearable to the eligible damsels of Burghminster society by the fact that Jack was considered a good "catch."

Burghminster mammas, with marriageable daughters, were of opinion that a woman hater had absolutely no right to own such a home as Bellairs did, and that a heavy tax should be instituted to discourage such flagrant examples of cast-iron bachelorhood.

He was decoyed, away into discreet woods, where dove-like eyes were flashed upon him; where tiny, well-gloved hands grasped his with tender appeals for help at the slightest ob-



stacle in the shape of a stile or gurgling brook.

But all in vain. Only one person sat on the stile, and the brook gurgled on, mocking the aspirations of match-making humanity. The dove-like eyes of Burghminster beauty might have been the blackened optics of a borough amazon, so small their attractions to the stony-hearted Bellairs.

He now took long objectless rides alone on Demon Dandy, whose natural depravity of character had almost disappeared under the influence of a long spell of hard work. Sometimes, in the course of these rides, he would pass Miss Huntingdon, who would greet him with a cold and distant bow, and who, when he was safely out of sight, would indulge in the feminine luxury of tears.

Bellairs, by having no tears, would, by touching Demon Dandy with the spur, incite him to rebellion.

The fights that followed were of benefit both to man and horse.

Nevertheless, every time he met Diana Huntingdon she could not help noticing that he was growing thinner and paler.

He, too, thought the same of her, till, on one occasion, the thought proved too much for him.

She had just disappeared round a bend in the leafy lane, walking slowly and with drooping head.

Bellairs, overcome by his feelings, clapped both spurs into Demon Dandy, a direct challenge for an equine struggle of the most violent character.

Demon Dandy answered the challenge by rearing wildly, then falling backwards with a heavy crash on to his master.

Bellairs was conscious of a glimpse of Demon Dandy's nose against the sky. Then a flash passed before his eyes and he knew no more.

When he came to himself he found his lost divinity bending over him.

He had a vague idea that she was calling him "Jack" and her "boy."

A half hour elapsed.

Bellairs said little. He just lay there happily explaining matters and recovering his breath.

"It is just as well that I did not let you buy Demon Dandy," he said, at last.

"Just as well, dearest, since you are not killed," said Diana. "But you will not ride him again?"

"I won't," ejaculated Bellairs, fervently.—Jerome Parsons in Tribune.

#### Johnny on the Dachshund.

The dachshund is a dog. He is very short up and down, and very long lengthwise. His forelegs are quite crooked, which is a good thing for him, because if they were straightened up his shoulders would be about four inches higher than the remainder of him. The dachshund wears his ears low down. He is quite docile, but prefers the German language to any other. It is amusing to see a dachshund chasing his tail, which he cannot do gracefully on account of not having enough legs. If I had to be a dog I would much rather be a large Newfoundland; still we must not repine at our lot. Whatever Providence orders is best for us. Our hired girl says her cousin once had a dachshund that got in his way when he was chopping wood, and he accidentally cut the dog's tail off. At nine o'clock the next day the dachshund emitted a frightful scream. He had just found it out. A dachshund is the only thing you cannot buy at a department store.—Chicago Tribune.

#### The Enchanted Bottle.

An exchange gives the following suggestion for amusing and astonishing your friends:

"Put a heavy empty bottle on the table and invite any one to blow it over. No one will believe this possible. You may show that it can be done by producing a small paper bag, laying it on the edge of the table with its opening towards you and standing the bottle on the closed end. You now press up the opening and apply your mouth to it and blow. The air will expand the bag, and the bottle will topple over."

#### Care of the Hair.

The hair suffers by reason of much ill-directed energy expended on its behalf, as well as by neglect.

Dressing the hair is so commonly done without intelligent appreciation of its needs, or is so often habitually disregarded, that the hair is rarely the adornment it might be.

A vigorous growth of hair is dependent upon the healthfulness of the scalp. Baldness, for example, is the usual accompaniment of a tight, thin scalp, while a soft, loose scalp, with a bountiful blood supply, will ordinarily produce an abundant growth of hair.

The scalp has been not inaptly compared to the soil, which is productive according to its nutritive ability, and also according to the well-judged care bestowed upon it.

Brisk, daily brushing is indispensable to the health of the hair. The scalp must be subjected to friction from the brush for the sake of cleanliness. A brush with rather stiff bristles is necessary in case the hair is thick. If the hair is thin, a softer brush accomplishes the same result. The root of the hair—the portion upon which growth depends—is stimulated by intimate contact with the brush, which should produce a sensation of pleasurable warmth in the scalp. A brush that scratches and irritates should be discarded.

The comb plays a minor part in hair-dressing, but requires equal care in its selection. It should have widely spaced, smooth and blunt-pointed teeth. The use of the old-fashioned, fine-toothed comb cannot be approved at any time, as it subjects the large, strong hairs to pulling and injury by splitting or cracking them, and may also tear the scalp.

Too frequent drenching is apt to be harmful to the hair, since it is thus apt to be kept moist and damp. This state is favorable to decomposition here as elsewhere. It is sufficient in most cases to practice washing the hair not oftener than once a week. A good toilet soap is to be used, the hair subsequently being well rinsed and carefully dried.

When the hair has not sufficient oil of itself, some substitute may be provided, for which nothing serves better than vaseline or olive oil. This is to be applied to the scalp or to the roots of the hair. The brisk, daily brushing recommended above is also a stimulant to the oil glands.

Singeing the ends of the hair is of no value as a means of stimulating its growth. The same may be said of close cropping, yet this is commendable in childhood, since it renders cleanliness of the scalp easy attainable, and allows free access of the air to the scalp, which is therefore consequently less subjected to prolonged dampness and decomposition.—Youth's Companion.

#### The Unreasoning Fear of Night Air.

The popular superstition that night air is unhealthful is combated in an article in the New York Independent. Medical men are constantly pleading, it says, for more air for the sick room, and especially at night, but popular tradition still holds its sway and limits ventilation below the point of proper wholesomeness. More than half a century ago a great English physician said that the only pure air at night is the night air, and pure air is the great desideratum in health or illness. Of late there has come the realization that the night air, especially in our large towns, is more wholesome than the day air. For one thing it contains less dust, because there is less movement on the streets to disturb dust accumulations and lift them into the grasp of the winds. How important this matter of dust and its dangers is may be gathered from the fact that in the recent European sanitariums for the treatment of tuberculosis there is a room adjoining the main entrance where patients must remove their walking shoes and don house shoes, and where they must brush their outer clothing, in order to avoid, as far as possible, carrying dust into the living rooms. Dust is not alone irritation, but it carries with it many living germs, most of them

## All Hands On Time

The second hand,  
the minute hand,  
the hour hand, run  
in unison on an

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harmless, but some capable of setting up annoying catarrhal conditions if they happen to find a resting place on already ailing tissues. The unreasoning fear of night air is a relic of days when less rational theories of health and disease prevailed. Sleeping rooms especially need thorough ventilation, and this is even more important for sufferers whose external respiration is interfered with by reason of pulmonary trouble or whose internal respiration is disturbed because of cardiac affections.

#### DOMESTIC ECONOMY.

##### Canning Beef at Home.

We make a practice of canning both beef and pork while fresh, says Millie Honaker in Orange Judd Farmer, and have never lost a can of either. We usually kill in the spring, and, of course, have quite a large quantity of beef to handle at once. The well-fattened animals we find make the best meat. Some of it is pickled, including the rib pieces; some of it is dried, and much of it is canned.

Cut the raw beef into pieces as large as can be crowded into the cans. Use some fat pieces, but do not let a drop of water touch the meat either before putting it in the can or afterwards. If any of the meat is carelessly handled and should become soiled, scrape or trim it carefully, but do not wash. Pack the meat into the cans, but do not fill them too full—that is, leave a little space in the top of each can, to allow room for the meat to swell, while cooking. Put one heaping teaspoon of salt into each can. Put on the rubbers and screw the covers down as tightly as possible. If the old covers are used, boil them first for half an hour. Put some pieces of shingles in the bottom of the boiler and set the filled cans on them, side by side, as close together as possible. If there are not enough cans of meat to fill the boiler, put in some that have been filled with water instead. This will prevent any of the cans of meat from tipping over while boiling. Fill the boiler to within three inches of the tops of the cans with cold water, and set it over a hot fire. After the water begins to boil, keep it boiling for three and a half hours, taking care to add more boiling water from time to time to replace what evaporates.

After the meat has cooked the specified length of time, lift out each can and tighten the covers. Sometimes the continued boiling will soften the rubbers, and sometimes the edges of the lids will cut them. In either case new rubbers must be substituted. Loosen the lid enough to draw out the old rubbers, and put under a new one. It is better not to remove the cover entirely. Let the cans cool, and the next day remove them to the cellar, and anticipate the pleasure of furnishing your table with delicious meats, when the thermometer forbids the thought of fire. The bones, with what meat is left on them, we put into a pickle and use first. An ordinary washboiler will hold from ten to twelve two-quart cans, and the work of filling

and cooking can easily be done in a day, by one person. Two days' canning will furnish from ten to twelve gallons of solid meat.

##### Domestic Hints.

**ORANGE SAGO.**—Cover one cup sago with two cups cold water. Soak until water is entirely absorbed, then add another cup boiling water. Cook till the sago is clear, and pour it over four oranges peeled and sliced and with all the pits carefully removed. Set aside until cool, and serve with sugar.

**RICE LEMON PIE.**—Cupful of sugar, yolks of three eggs, one tablespoonful of butter, three tablespoonfuls of sweet milk, two tablespoonfuls of boiled rice, mashed fine, grated rind and juice of one lemon. Beat all together, pour into a lined pan and bake. When done spread with meringue of whites and sugar.

**WHIPPED POTATO.**—If you have two cups of cold mashed or riced potato, put a tablespoon of butter and four tablespoons of milk or cream in a double boiler, then add the potato. In ten minutes it will be hot. Beat with a silver fork till light and fluffy. Serve as ordinary mashed potato, or use it as a border for any dish. It tastes exactly like newly cooked potato.

**COFFEE LAYER CAKE.**—Put into a bowl two cupfuls of sifted flour, add to it two level teaspoonfuls of baking powder, beat the yolks of two eggs, add to them one cupful of sugar; beat well, then add the rind and juice of one lemon, add the flour and powder to this, half a cup of cold water, a pinch of salt and the whites of the eggs beaten stiff; pour into greased jelly-cake tins and bake in a quick oven ten minutes.

**STEWED CALF'S LIVER.**—Wash and cut a calf's liver in slices. Into a deep saucepan put one turnip, one carrot, one stalk of celery and one onion (all sliced); lay the liver on top of the vegetables, sprinkle salt and pepper over all and pour on a pint of boiling water; cover and let stew until the liver is tender. When done take out the liver and put it on a hot platter, strain the gravy and thicken with one tablespoonful of butter and one of browned flour, stir and when it boils take from the fire and pour over the meat.

**MINT JULEP.**—Put one-half teaspoonful of orange bitters in a large glass with three sprigs of mint. Crush the mint in the bitters and then add one sherry glass of Italian Vermouth and one sherry glass of rye whiskey. Fill the glass about one-quarter full of finely shaved ice, stir a little, then fill the glass with fine ice. Add a few thin slices of orange and pineapple, a few strawberries and two or three sprigs of mint. Insert two straws and serve. Handle the glass carefully so as not to destroy the frosting on the outside of the glass.

**BARON:** This is my largest carp pond, madam. Every spring the pond is stocked with fish brood. The animals are then scarcely two inches long. Visitor: Why, do those little things already know how to swim?



## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, June 4, 1902

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July	Sept.
Wednesday.....	73% @ 72%	72% @ 71%
Thursday.....	72% @ 72%	71% @ 70%
Friday.....	72% @ 72%	71% @ 70%
Saturday.....	72% @ 71%	71% @ 70%
Monday.....	71% @ 72%	70% @ 70%
Tuesday.....	72% @ 71%	70% @ 69%

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	July	Sept.
Wednesday.....	35 @ 35%	30% @ 30%
Thursday.....	35 @ 34%	28% @ 28%
Friday.....	35 @ 34%	28% @ 28%
Saturday.....	34 @ 34%	28% @ 27%
Monday.....	34 @ 35%	27% @ 28%
Tuesday.....	35 @ 34%	28 @ 27%

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	1 11% @ 1 12	—
Friday.....	—	—
Saturday.....	1 12 @ 1 11%	—
Monday.....	1 10% @ 1 11%	—
Tuesday.....	1 11 @ 1 10%	—
Wednesday.....	1 10% @ —	—

\*Holiday.

## WHEAT.

Business in the local wheat market continues of slim volume, the inactivity being the result of light offerings rather than absence of demand. There is a fair inquiry for both shipping and milling wheat and current values are being as a rule well maintained. Stocks at Port Costa are showing steady reduction through the ships now loading, and supplies there are expected to be of quite slim proportions at the end of the season. That the market here will display any special activity during the current month, or until new crop wheat is obtainable in wholesale quantity, is not probable. Present indications are that the coming crop in this State will not be as large as was generally estimated a few months ago. In most of the northern counties the yield promises to be fair to good, but in the southern part the outlook is unmistakably for a light crop of grain. In May nine cargoes of wheat were cleared from this port, in addition to which there were some shipments by steamer to Australia and South America, the wheat exports for the month aggregating nearly 30,000 tons, with a valuation of \$695,000. This is very close to the outward movement in May of last year, which footed up 28,000 tons, valued at \$580,000. For the season to date 465,000 tons of wheat has been shipped from this port, representing a valuation of \$10,000,000. The wheat exports from here have not been exceeded in quantity or value since the season of 1897-98. Market at close was slightly easier for export grades.

California Milling.....	1 16% @ 1 20
Cal. No. 1 shipping, alongside.....	1 12% @ 1 13%
Oregon Valley.....	—
Washington Blue Stem.....	—
Washington Club.....	—
Off qualities wheat.....	1 10 @ 1 12%

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	6s14d @ 6s2d	6s4d @ 6s4d
Freight rates.....	36% @ 37%	23% @ 25%
Local market.....	97% @ 1 00	1 12% @ 1 13%

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.12 @ 1.10.  
May, 1903, delivery, \$— @ —.  
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.10 @ —; May, 1902, \$—.

## LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on May 1st and June 1st:

Tons—	June 1st.	May 1st.
Wheat.....	50,062	62,926
Barley.....	19,177	13,278
Oats.....	3,451	5,789
Corn.....	1,426	891

\*Including 32,007 tons at Port Costa, 17,192 tons at Stockton.

†Including 1,486 tons at Port Costa, 1,173 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 12,864 tons for the month of May. A year ago there were 88,214 tons wheat in Call Board warehouses.

## FLOUR.

The market is showing a generally healthy tone, with a fair movement, both outward and on local account. Stocks are not large of either family or bakers' extras, and are quite light of superfines. Most of the flour going outward is for Central and South America, although shipments to Asia are on the increase. Values are being well maintained at the quoted range.

Superfine, lower grades.....	2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

## BARLEY.

The market for feed descriptions has been showing less buoyancy than for some weeks past, owing to 3000 tons or more of Call Board barley being released which had been held against May contracts. There has been no pronounced pressure to realize, however, and quotable values have been without marked change. For high-grade barley or brewing descriptions the tendency has been to firmness, owing to a little more inquiry, although the improvement was not sufficiently pronounced to warrant any appreciable advance in quotations. The speculative market showed no particularly noteworthy features, business therein being light. The first carload of new barley arrived Monday from Voita and sold at 95c. per cental, the quality being fairly good. New barley was to-day offered at 87c., Stockton delivery.

New Barley.....	90 @ 95
Feed, No. 1 to choice old.....	97% @ 1 00
Feed, fair to good.....	95 @ 97%
Brewing, No. 1 to choice.....	1 01% @ 1 01%
Chevalier, No. 1 to choice.....	1 10 @ 1 20
Chevalier, poor to fair.....	95 @ 1 05

## OATS.

Stocks and offerings of all descriptions are light, but more especially so of white varieties. Market continues to show firmness and is not likely to incline materially in favor of buyers for some time to come. The heavy shipments being made from Vancouver to South Africa are reducing northern coast supplies to small proportions.

White Oats, fancy feed.....	1 45 @ 1 47%
White, good to choice.....	1 40 @ 1 42%
White, poor to fair.....	1 32% @ 1 35
Gray, common to choice.....	1 35 @ 1 40
Milling.....	1 42% @ 1 47%
Surprise, good to choice.....	1 45 @ 1 50
Black Russian.....	1 20 @ 1 32%
Red.....	1 25 @ 1 40

## CORN.

Values have not been lately very clearly defined, business being of an exceedingly light order. Spot stocks have been of small volume and have been largely under speculative control, with asking figures on a higher plane than could be maintained and noteworthy custom be secured. While market is not likely to develop any great weakness, the tendency is to easier figures than have been lately current.

Large White, good to choice.....	1 50 @ 1 55
Large Yellow.....	1 45 @ 1 50
Small Yellow.....	1 47% @ 1 52%

## RYE.

Offerings and demand are both of slim proportions. Values are fairly steady at last quoted range.

Good to choice.....	90 @ 95
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## BUCKWHEAT.

No evidence of anything doing in this cereal at present. Prices are without quotable change, but are necessarily largely nominal.

Good to choice.....	1 55 @ 1 70
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## BEANS.

The market remains quiet throughout, which is not unusual for this time of year. Values are quotable about the same as last noted, but if selling pressure were exerted, full current quotations could not be realized. On the other hand, under active buying, the payment of slightly higher figures than are now quotable might be necessary. Aside from Lady Washingtons, Small Whites and Pinks, stocks are of small volume, and are particularly light of Pea beans, Black-eyes and Red Kidneys. Limas are not being offered very freely here, and business in them at rates quoted is mostly of a jobbing character.

Pea, fair to good, 100 lbs.....	3 00 @ 3 25
Small White, good to choice.....	2 40 @ 2 50
Lady Washington.....	2 30 @ 2 40
Pinks.....	2 10 @ 2 20
Bayos, good to choice.....	2 85 @ 3 00
Reds.....	2 25 @ 2 50
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	3 65 @ 3 75
Black-eye Beans.....	4 50 @ 4 75
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

## DRIED PEAS.

Not many coming forward at present, but stocks in store and warehouse are of

fairly liberal proportions, especially of the Green or Blue variety. Market is dull at nominally unchanged values.

Green Peas, California.....	1 50 @ 2 00
Niles Peas.....	1 75 @ 1 80

## WOOL.

There is the same quiet state of trade existing in the local wool market as previously noted. Most of the wools now here are in second hands and are held at figures not obtainable at present in this market from either the representatives of Eastern manufacturers or local wholesale operators. It is the exception where pressure to realize is being exerted, most holders being content to wait until demand becomes more urgent.

## SPRING.

Northern Cal., free.....	15 @ 16%
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	12 @ 15

## HOPS.

The local market is exhibiting no activity, either in spot stocks or in the way of contracting for new hops. Supplies of last crop are light and are quoted by the jobbing trade at 15@17c for good to choice. Dealers bid 12@13c for choice to select new to arrive, but find growers as a rule unwilling to contract at the figures offered. A New York review gives the following concerning the Eastern market: "Increasing firmness is shown in nearly all classes of stock, and while the trading has not been on a very large scale the holdings have been reducing steadily. Of State hops the supply is particularly short and the position seems to be stronger than for several years. Bids of 20c have been made on the market by dealers, and brewers would have to pay 21c for really choice quality. There have been some sales of Pacific coast to dealers at 18c, and that price is bid for more without getting the goods. Time sales of choice Oregon and Sonomas to brewers are reported above our top rate. Yearlings about gone and they are sought for. Old olds are constantly inquired for and some business accomplished in range 4@7c. The hop yards in this State are recovering from the effects of the recent freeze and it is not believed that the damage will be serious beyond retarding the crop and making a later harvest. England reports some frost, but it is not expected that any serious damage has been done the vines."

## HAY AND STRAW.

The market for hay is without particular firmness, unless it be for strictly choice Wheat or select mixed Wheat and Oat, of last crop, there being no heavy spot offerings of these descriptions. Much of the new hay offering is of rather common quality, as is generally the case at the beginning of the season, and market for ordinary qualities of new is slow and unfavorable to sellers. New Wild Oat sold at \$7.50 @ 8.00, and new Wheat of fair quality went at \$9.

Wheat, good to choice.....	9 00 @ 12 00
Wheat and Oat.....	9 00 @ 11 00
Oat, good to choice.....	8 00 @ 10 50
Barley.....	7 50 @ 9 00
Alfalfa.....	8 00 @ 10 50
Clover.....	7 00 @ 8 50
Compressed.....	9 00 @ 12 00
Straw, bale.....	40 @ 50

## MILLSTUFFS.

Market is not burdened at present with offerings of mill offal of any description, but there is enough to accommodate the immediate limited demand at the rather high prices now ruling. Tendency on Rolled Barley and Milled Corn was to slightly easier figures than have been prevailing.

Brans, 1/2 ton.....	18 00 @ 19 00
Middlings.....	21 00 @ 23 00
Shorts, Oregon.....	19 00 @ 21 00
Barley, Rolled.....	21 00 @ 22 00
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

## SEEDS.

Stocks of most kinds below noted are too light at present to admit of any noteworthy operations. There are moderate receipts of Flaxseed from the North, most of which is being delivered on contracts. The outlook for Mustard in this State is for a very small yield this season.

Flax.....	2 50 @ 2 75
Mustard, Yellow.....	3 30 @ 3 60
Mustard, Trieste.....	3 00 @ 3 50
Canary.....	3 1/2 @ 3 1/2
Rape.....	1 1/2 @ 1 1/2
Hemp.....	3 1/2 @ 3 1/2

## BAGS AND BAGGING.

Contrary to general expectations in the early part of the year, the Grain Bag

market is showing weakness, and there is little or no prospect of there being any recovery in prices or tone during the balance of the season. The demand has not come up to expectations, but this has not affected the market so much as the extremely low prices at which Calcutta bags are being offered for the campaign of 1903.

Calcutta Grain Bags, buyer June-July.....	5% @ —
Calcutta Grain Bags, spot.....	5% @ —
San Francisco Grain Bags, 22x36, spot.....	5% @ —
San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	3 @ 36
Wool Sacks, 3 1/2 lbs.....	3 @ 33
Fleece Twine.....	8 1/2 @ —
Gunnies.....	— @ —
Bean Bags.....	5 1/2 @ 5 1/2
Fruit Sacks, cotton, three sizes.....	5 1/2, 6, 6 1/2
Fruit Sacks, Jute.....	7 @ 7 1/2

## HIDES, PELTS AND TALLOW.

The Hide market is moderately firm at quotably unchanged values, with a fair demand for desirable stock. In Pelts there is no noteworthy activity to report and no special firmness, but the previously quoted range of values continues in force. Tallow is not lacking for custom, all good to choice lots being readily taken at full current figures.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10 1/2 @ —	8 1/2 @ —
Medium Steers, 48 to 56 lbs.....	9 1/2 @ —	8 @ —
Light Steers, under 48 lbs.....	8 1/2 @ —	7 1/2 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	7 1/2 @ —
Light Cow Hides, under 50 lbs.....	8 1/2 @ —	7 1/2 @ —
Stags.....	6 1/2 @ —	— @ —
Wet Salted Kip.....	8 @ —	7 @ —
Wet Salted Veal.....	9 @ —	8 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ —	14 @ —
Dry Kip and Veal, 11 to 16 lbs.....	14 @ —	12 @ —
Dry Calf, under 4 lbs.....	17 @ —	15 @ —
Salted Horse Hides, large.....	2 75 @ —	— @ —
Salted Horse Hides, medium.....	2 25 @ —	2 50 @ —
Salted Horse Hides, small.....	1 25 @ —	— @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, medium.....	1 50 @ —	— @ —
Dry Horse Hides, small.....	1 00 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 1/2 skin.....	80 @ —	1 20 @ —
Pelts, medium wool, 1/2 skin.....	50 @ —	75 @ —
Pelts, short wool, 1/2 skin.....	30 @ —	40 @ —
Pelts, shearing, 1/2 skin.....	15 @ —	30 @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good medium.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/2 @ —	— @ —
Tallow, No. 2.....	4 1/2 @ —	4 1/2 @ —
Goat Skins, perfect.....	30 @ —	37 1/2 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

## HONEY.

The market is quiet, with no heavy quantities offering on the spot or to arrive. That values will incline materially in favor of buyers the current season is not probable. The yield in this State will undoubtedly prove much lighter than was generally estimated a few months ago. Prospects are that high-grade honey will meet with a tolerably stiff market.

Extracted, White Liquid.....	6 @ —
Extracted, Light Amber.....	4 1/2 @ —
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	10 @ 12
Amber Comb.....	7 @ 10
Dark Comb.....	6 @ 7

## BEESWAX.

Values are being well maintained at the quoted range. There is a very fair demand and not much offering.

Good to choice, light, 1 lb.....	27 @ 29
Dark.....	25 @ 26

## LIVE STOCK AND MEATS.

Beef is in fair supply, with demand not very brisk, but values show no marked changes. Mutton is selling at much the same figures as have been current for several weeks past, but offerings are proving ample for current needs. Lamb was not in heavy receipt and for such offerings as were in prime to choice conditions the market was moderately firm at the figures quoted. Veal went at practically unchanged values, with a good demand for choice small at full current rates. Hogs sold at a little lower range than preceding week, the quantity offering showing moderate increase.

Beef, first quality, dressed, net 1/2 lb.....	7 @ 7 1/2
Beef, second quality.....	7 @ —
Beef, third quality.....	6 1/2 @ —
Mutton—ewes, 8 @ —; wethers.....	8 @ 8 1/2
Hogs, hard grain fed, 125 to 200 lbs.....	6 1/2 @ 6 1/2
Hogs, small, fat.....	6 1/2 @ 6 1/2
Hogs, large, hard, over 200 lbs.....	6 1/2 @ 6 1/2
Hogs, soft or acorn fed.....	5 1/2 @ —
Hogs, country dressed.....	7 1/2 @ 8
Veal, small, 1/2 lb.....	8 @ 9 1/2
Veal, large, 1/2 lb.....	7 @ 8 1/2
Lamb, spring, 1/2 lb.....	9 @ 9 1/2

## POULTRY.

Considering the small quantity of live Eastern poultry which has been arriving lately, the market for California stock is not showing the improvement that many would expect. The demand, however, is never so brisk in the summer months as



during the balance of the year. Then while there is not much Eastern live poultry at present on the market, there is considerable Eastern dressed stock held here in cold storage. Good to choice California stock brought fair prices.

Turkeys, dressed, choice.....	—@—
Turkeys, alive, Hens, # lb.....	13 @ 14
Turkeys, alive, Gobblers, # lb.....	13 @ 14
Hens, California, # dozen.....	4 00 @ 5 50
Roosters, old.....	4 50 @ 4 75
Roosters, young (full-grown).....	6 50 @ 8 00
Fryers.....	4 00 @ 5 00
Broilers, large.....	3 00 @ 3 50
Broilers, small to medium.....	1 75 @ 2 50
Ducks, old, # dozen.....	3 50 @ 4 00
Ducks, young, # dozen.....	4 50 @ 6 00
Geese, # pair.....	1 25 @ 1 50
Goslings, # pair.....	1 25 @ 1 50
Pigeons, old, # dozen.....	1 75 @ 2 00
Pigeons, young.....	1 25 @ 1 50
Hare, Belgian, large, # doz.....	4 50 @ 5 00

#### BUTTER.

The advanced figures established the preceding week have caused the demand to be less active, especially on speculative account. Conservative dealers see little margin for profit in storing at full prices now ruling for fresh product, with ice-house expenses, interest, etc., added. While the market cannot be termed firm at the last advance, the keen competition among receivers is apt to prevent any appreciable relapse in quotable values.

According to statements from the U. S. Department of Agriculture, Bureau of Animal Industry, the new law affecting the sale of worked-over butter and also of oleomargarine makes no distinction between renovated butter and process butter. In manufacture and commerce throughout the East these are now recognized as one and the same thing. They are prepared from packing stock which has become unmerchantable by reason of rancidity, off flavor, mold or other causes. The characteristic feature of the process of renovation is melting to a degree of fluidity which will permit easy movement with pumps, aeration and clarification. Only such butter as has been thus treated comes under the law in any way. The law does not touch the mere mixing or blending, washing or recoloring, or re-salting of different lots of butter, provided it is not melted in the process and no chemicals are used.

Creamery, extras, # lb.....	21 @—
Creamery, firsts.....	20 @—
Dairy, select.....	20 @—
Dairy, firsts.....	19 @—
Mixed store.....	17 @—

#### CHEESE.

Demand is not brisk, and while market is rather weak in tone, materially lower values are not looked for. Considerable California cheese of recent make is now going into cold storage, and this will tend to impart a steadier feeling for new. Old domestic is practically out of stock. Eastern market is easier for new, but prices there are not expected to touch as low levels as last season.

California, fancy flat, new.....	8 1/2 @ 9 1/4
California, good to choice old.....	— @—
California, fair to good.....	— @—
California, "Young Americas".....	8 1/2 @ 10

#### EGGS.

While the demand was not particularly brisk, the arrivals showed some decrease, and market for strictly choice to select was moderately firm at the figures quoted, with some sales of favorite marks going to special custom at an advance of 10@20c. But business at these extreme rates was in a small way, the price including in many instances the cost of delivery to remote parts of the city or to suburban points. Some Eastern seconds are being landed on the market at a cost of about 17c on track here.

California, select, large, white and fresh.....	19 @—
California, select, irregular color & size.....	17 1/2 @ 18 1/4
California, good to choice store.....	17 @—

#### VEGETABLES.

A noteworthy feature was the arrival of Green Corn on Monday from Vacaville, the first of the season. It went at 75c. per dozen, the quality being only fair. Subsequent sales were reported down to 50c. per dozen. Green Peas were quite plentiful and for common qualities the market was dull and exceedingly weak. Choice brought nearly as good figures as preceding week. Cucumbers were in materially increased supply and lower. Summer Squash in fine condition met with a good market, some from Antioch being quotable at \$2 25 per large box. New Onions were in increased receipt and lower, with Red taking the lead, although a good many White are arriving in boxes and are meeting with fair custom at the rather low prices ruling, 30@40c. per box.

Asparagus, # box.....	1 00 @ 2 25
Beans, String, # lb.....	1 1/4 @ 3
Beans, Wax, # lb.....	1 1/4 @ 3
Cabbage, choice garden, # 100 lbs.....	50 @—
Cucumbers, # box.....	75 @ 1 25
Egg Plant, # box.....	1 25 @ 1 75
Garlic, # lb.....	— @—
Onions, Yellow Danver, # cental.....	— @—
Onions, New Red, # cental.....	40 @ 50

Peas, Sweet garden, # lb.....	1 1/4 @ 2
Peas, good to choice, # sack.....	75 @ 1 25
Peppers, Green, # lb.....	12 1/4 @ 17 1/4
Rhubarb, # box.....	50 @ 1 00
Summer Squash, # box.....	1 00 @ 1 25
Tomatoes, # box.....	1 75 @ 2 25

#### POTATOES.

New Potatoes were in fair receipt, both Burbanks and Early Rose, with the quality steadily improving and now of good average for this date. Choice to select Burbanks are receiving the preference and are commanding tolerably firm figures. Old Potatoes are dragging at low prices, although there are no very heavy quantities now in stock. The quotations below given are for new, unless otherwise specified.

Burbanks, choice to select.....	1 50 @ 2 00
Early Rose.....	1 25 @ 1 50
OLD.	
River Burbanks in sacks, # cental.....	90 @ 1 15
Petaluma and Tomales Burbanks.....	— @—
Oregon Burbanks.....	1 10 @ 1 35
River Reds.....	90 @ 1 10
Sweets, Merced, # cental.....	— @—

#### The Fruit Market.

##### FRESH FRUITS.

The mid-Summer varieties are beginning to put in an appearance, but initial receipts as a rule have not been sufficiently ripe to be sought after. The first Pears were received Tuesday by the Growers' Co-operative Agency and sold at 75c. per 20-lb. box. They were of the Madeleine variety. Peaches arrived Monday from Vacaville, but they lacked color, as also did some Cherry Plums, which were received the latter part of last week from same section. Apricots coming forward are mostly of the Pringle variety, and these have little to recommend them other than that they mature early. The larger varieties in ripe condition will likely meet with a good market in the near future. Some Green Apples are coming forward, but they are receiving very little attention. Cherries were in fair receipt and fair demand at tolerably steady rates. Berries of most kinds ruled about as last quoted. The damage by rain to Cherries and Berries was not so great as many had anticipated.

Apples, # fancy, 4-tier box.....	— @—
Apples, good to choice, # 50-lb. box.....	— @—
Apples, common to fair, # 50-lb. box.....	— @—
Apricots, Pringle, # crate.....	75 @ 1 25
Cherries, Black, # box.....	40 @ 75
Cherries, White, # box.....	25 @ 50
Cherries, Black, in bulk, # lb.....	4 @ 6 1/4
Cherries, White, in bulk, # lb.....	2 1/4 @ 5
Cherries, Royal Anne, # crate.....	85 @ 1 10
Cherries, Royal Anne, # lb.....	7 @ 8
Blackberries, # crate.....	1 2 @ 1 50
Raspberries, # drawer.....	40 @ 75
Currants, # drawer.....	40 @ 60
Gooseberries, common, # chest.....	2 50 @ 3 00
Gooseberries, English, # lb.....	3 1/4 @ 4 1/4
Strawberries, Longworth, # chest.....	5 00 @ 3 00
Strawberries, Melinda, # chest.....	3 00 @ 5 00

##### DRIED FRUITS.

The market for dried and evaporated fruits has been the past week about as quiet and featureless as it well could be, which cannot be termed remarkable under existing conditions. There is very little dried fruit now in stock, and naturally not much inquiry for the same at this late date. Buyers and sellers are both awaiting the opening of the new crop season, but it will be a month or more before the first new Apricots will be available, and this variety is the earliest on the list in the dried fruit line. It is not probable that anything of consequence will be done until new crop is on market in sufficient quantity to admit of wholesale trading. Some dealers are talking low figures for future deliveries of new fruit, but values for this year's dried product have yet to be determined. Some speculative operators, as is natural at this time of year, are making use of the customary bear tactics to depress the market as much as possible, but it remains to be seen what success they will meet with in this direction. With stocks of last crop practically wiped out here and East, and the foreign demand for California fruit on the increase, the season could not well open in much better shape for the producing interest, so far as prospective requirements are concerned. Values for old are quotably unchanged, but are largely nominal at this date, in the absence of any noteworthy supplies of 1901 fruit.

##### EVAPORATED OR BLEACHED.

Apricots, Royal, choice, in sacks, # lb.....	9 @ 10
Apricots, Moorpark.....	10 @ 12
Apples, in 50-lb boxes, rings, pressed, fancy.....	11 @ 11 1/4
Apples, 50-lb boxes, rings, pressed, good to choice.....	10 @ 10 1/4
Nectarines, # lb.....	5 @ 6
Peaches, unpeeled, choice.....	6 1/2 @ 7 1/4
Peaches, peeled, in boxes.....	12 @ 14
Plums, Red and Black, pitted.....	5 @ 6
Plums, White and Yellow.....	5 @ 6
Prunes, 4 sizes, in bags, —@—c; 50-60s, 4 1/4 @ 4 1/2 c; 60-70s, 4 @ 4 1/4 c; 70-80s, 3 1/2 @ 3 3/4 c; 80-90s, 3 @ 3 1/2 c; 90-100s, 2 1/2 @ 3; these figures for 1901 crop.	

##### COMMON SUN-DRIED.

Apples, sliced.....	6 @ 6 1/4
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Apples, quartered.....	6 @—
Peaches, unpeeled.....	6 @ 6 1/4
Pears, prime halves.....	5 @ 5 1/4
Plums, unpitted, # lb.....	1 1/4 @ 2 1/4

#### RAISINS.

Nothing new to report. Stocks are of light volume, and are principally of 2 and 3-crown loose Muscatels in the hands of seeders.

Following are the prices for 1901 crop in carload lots:

Loose Muscatels—	Per lb.
4-crown.....	6 1/4 @—
3-crown.....	— @—
2-crown.....	— @—
Seedless Sultanas.....	9 @ 9 1/2
Thompson's Seedless, bleached.....	9 @ 9 1/2
Seeded—	
1-lb. carton.....	7 1/4 @ 8
12-oz. carton.....	6 1/4 @ 6 1/4
London Layers, 20-lb. boxes—	
2-crown.....	— @—
3-crown.....	— @—

#### CITRUS FRUITS.

Oranges are in light stock and limited demand. Present offerings include few which can be termed choice. Lemon market is moderately firm for choice to select, with demand fair for best qualities, but the lower grades are dragging at previously quoted figures. Limes are in fair supply and prices unchanged.

Oranges—Navels, # box.....	1 50 @ 4 00
Mediterranean Sweet.....	1 00 @ 2 75
Valencias, # box.....	2 00 @ 3 75
Seedlings, # box.....	1 00 @ 2 50
Tangerine, quarter box.....	— @—
Lemons—California, select, # box.....	2 50 @ 2 75
California, good to choice.....	1 75 @ 2 25
California, common to fair.....	1 00 @ 1 50
Grape Fruit, # box.....	1 00 @ 2 50
Limes—Mexican, # box.....	4 00 @ 4 50

#### NUTS.

Market for both Almonds and Walnuts is ruling firm, with stocks nearly exhausted. Business in Peanuts is mainly of a light jobbing character and at generally unchanged values.

California Almonds, shelled.....	16 @ 19
California Almonds, paper shell, # lb.....	12 @ 13
California Almonds, soft shell.....	9 @ 10
California Almonds, hard shell.....	5 @ 6
Cal. White Walnuts, No. 1 soft shell.....	12 @ 13
Cal. White Walnuts, No. 2 soft shell.....	10 @ 11
Cal. White Walnuts, No. 1 hard shell.....	10 @ 11
Cal. White Walnuts, No. 2 hard shell.....	7 @ 8
Peanuts, California, fair to prime.....	4 1/4 @ 5 1/4
Peanuts, Eastern, hand-picked.....	5 1/4 @ 6
Pine Nuts.....	5 @ 6

#### WINE.

The market is without new feature, being quiet and practically the same as at date of last review. Dry wines of the vintage of 1901 are quotable nominally at 20@25c. per gallon wholesale, the extreme quotation being more in accord with the views of growers than with bids being made or with prices obtainable from wholesale dealers. There is no inquiry worth mentioning at present, most handlers appearing to be fairly supplied for the time being. There is a moderate movement outward, both by water and rail, principally of blended stock.

#### Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	65,126	6,108,140
Wheat, centals.....	168,132	9,855,080
Barley, centals.....	50,291	6,215,154
Oats, centals.....	4,050	780,691
Corn, centals.....	6,780	133,166
Rye, centals.....	490	270,761
Beans, sacks.....	1,867	700,296
Potatoes, sacks.....	11,952	1,342,061
Onions, sacks.....	4,405	200,908
Hay, tons.....	1,993	137,657
Wool, bales.....	1,445	71,605
Hops, bales.....	145	9,033

#### EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	51,558	4,152,130
Wheat, centals.....	159,078	9,130,439
Barley, centals.....	4,248	4,283,761
Oats, centals.....	44	3,861
Corn, centals.....	100	12,372
Beans, sacks.....	383	24,781
Hay, bales.....	2,700	22,034
Wool, pounds.....	1,241,854	1,044,291
Hops, pounds.....	1,549	555,595
Honey, cases.....	15	6,136
Potatoes, pack's.....	244	48,070

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#### California Dried Fruit at New York.

NEW YORK, June 4.—Evaporated apples, common, 7@9c; prime wire tray, 9 1/4 @ 10c; choice, 10 1/4 @ 10 1/2 c; fancy, 11 @ c.  
California Dried Fruits.—Stocks of most kinds light and will likely clean up before new season opens.  
Prunes, 3 1/2 @ 6 1/4 c.  
Apricots, boxed, 10 1/2 @ 14c; bags, 10 1/2 @ 12c.  
Peaches, unpeeled, 8 1/2 @ 10 1/2 c; peeled, 14 @ 16c.

#### New Patents.

DEWEY, STRONG & Co.'s SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING MAY 20, 1902.

700,292.—SASH CORD FASTENER—P. Barnum, S. F.  
700,477.—SKIRT AND DRAWERS—Lillian A. Burdard, S. F.  
700,675.—MOP HEAD—E. B. Campbell, Bakersfield, Cal.  
700,819.—MOVING HEAVY BODIES—C. V. Fowler, Los Angeles, Cal.  
700,321.—CONVEYING APPARATUS—F. R. French, S. F.  
700,322.—CAN HOLDER—L. Funck, Farmington, Cal.  
700,194.—WASHING MACHINE—E. D. Hamilton, Vancouver, Wash.  
700,327.—COFFEE CLEANER—W. A. Hastings, S. F.  
700,685.—WEEDING TOOL—H. Havil, Los Angeles, Cal.  
700,493.—GRAINING APPARATUS—G. A. Herzog, S. F.  
700,501.—HOUSE—W. C. James, Cucamonga, Cal.  
700,430.—BIT AND REAMER—G. A. Lane, Lakeside, Cal.  
700,349.—VEHICLE BRAKE AND BELL—S. H. Madson, Haywards, Cal.  
700,350.—BICYCLE BRAKE—A. Main, Powelton, Cal.  
700,353.—HAY DERRICK—G. G. Mayenschein, Sunnyside, Wash.  
700,354.—WRENCH—J. D. McFarland, Jr., S. F.  
700,327.—HOOR LOCK—A. Newell, Pasadena, Cal.  
700,362.—WINDOW SCREEN—O. Niehaus, West Berkeley, Cal.  
700,704.—TANK HOOP FASTENER—C. L. Parker, Los Angeles, Cal.  
700,243.—LOCK—G. T. Roberts, Coronado Beach, Cal.  
700,243.—ROTARY ENGINE—S. S. Rose, Amador, Cal.  
700,710.—FENCE MACHINE—F. Stebler, Riverside, Cal.  
700,581.—SNAP HOOK—A. J. Towner, Santa Ana, Cal.  
700,596.—ROAD SCRAPER—T. Wilson, Meyers Falls, Wash.



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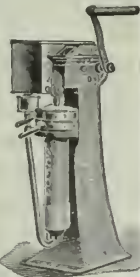
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## SHEEP AND WOOL.

The Angora Goat in Colusa County.

By H. H. HARLAN, in the Willams Farmer.

Pure Angoras were imported to America but a few years ago, and since that time, through the close observation and personal experience of a very few breeders, it has been proven beyond a possible doubt to be both a pleasant and profitable business. So firmly did the few breeders believe in its value that they have endeavored to procure, and, through their never tiring and persistent efforts, have by a great expenditure of money succeeded in getting a few other importations from Asia Minor and South Africa, the principal difficulty arising, as is presumed, from the adverse opinions of those peculiar governments, not wishing to have what might be a successful rival or competitor in America by allowing pure blood Angoras to be exported out of their realms.

Such breeders deserve much credit, and the new beginners, as well as those yet to engage in the industry, must always feel indebted to them. Through these importations we now have, by crossing with the common goat, quite a number of fairly well bred animals, a few of which are nearly, if not quite, as pure as those in the mother country.

Through the generosity and universal desire of the competent and experienced breeders to inform the public—believing it to be due to the literature in circulation treating upon the industry—the value of this beautiful animal is being rapidly disseminated.

FOR MOUNTAIN LANDS.—The all wise Creator placed all things on earth for a use. We have found use for all domestic animals. We have made use of the oceans, the rivers and the small streams. We have made use of the broad plains, the fertile valleys, and, in fact, all country prolific in nutritious grass; and now, through the Angora, we are finding a method to utilize the once worthless mountains and brush-covered plains. We have many thousands of acres in America, and especially on the Pacific coast, naturally adapted to the raising of goats. A large portion of such lands in our very near vicinity yet belongs to the Government, and yet we have daily inquiry for homes by many wishing to be our neighbors. Why not inform them of the vast possibilities in raising Angoras and of the great ranges of brush-covered mountains surrounding us? And a section of country valueless for any other purpose yet known.

The waste country, or most of the land yet in the hands of the Government, is covered with chemise, manzanita, oak, bush brush and numerous other shrubbery which is to a goat what grain is to

a swine. This vast acreage can quickly be transformed from a coyote den into a useful range checkered with happy homes and schoolhouses—where prosperity may reign instead of solitude and wilderness, as they do to-day. And it will not only remunerate the future owners, but will create an income to the Government in the way of increased taxable property.

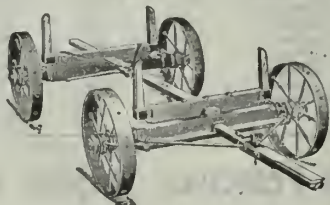
SHEEP OR GOATS.—Compared with sheep at the present time, and prices of both wool and mohair, the Angora will produce as many dollars and cents in mohair as the sheep does in wool. The average sheep clip is about eight pounds annually, while average Angoras will shear about one-half that weight, or four pounds; but for many years mohair has been worth about double that of wool. The expense of handling goats is less than that of sheep, as frequently they are clipped but once a year. Shepherd hire is something less, and they do not require dipping for a lingering disease; but the greatest saving is in range, as they can be successfully ranged on low-grade land of a minimum value, while all other stock require a greater investment of capital in range than in the stock to be ranged.

Figuring the interest on money invested, you will figure on \$1 in Angoras, while you must certainly figure on \$2 in any other kind of live stock. Their produce is, without doubt, a standard article, as it has long been in fair demand, being manufactured into many grades of clothing, especially the finer and more costly lines of ladies' dress goods. Some of the best grades of men's clothing are made of mohair, while many patterns of the finest plushes, and various other articles, are also made from the material grown on the back of an Angora goat.

RECLAIMING WASTE LANDS.—The Angora does not only produce a profitable and standard material, but is becoming very useful as a brush cleaner, and is now being used in almost every State in the Union for that purpose. It is an established fact that they will not only clear land perfectly clean of brush and all eatable obstructions, but will leave the land in a productive condition. We have a few places in our near vicinity where Angoras have been ranged where the once brush-covered hilltops have been turned into fields of bunch grass, clover and filaree. We not only have this waste land in mountainous regions, but have many acres along rivers and smaller streams where the land would be very valuable if clear of brush. The Angora will destroy all of the many different kinds of brush and produce a valuable crop of mohair while destroying the brush. In order to thoroughly kill the brush and clear the land of other undesirable vegetation, they should be enclosed in pastures, the size of the pastures to be enclosed being governed by the size of the flock; but be careful of your fruit trees and ladies' underwear, as they are particularly fond of both.

ANGORA MEAT.—While brush is the natural food of the goat, they do equally well on grass, hay, grain, or, in fact, anything upon which other stock subsist; but the most profitable feature about a goat is that he can be raised on food utterly valueless for other domestic animals. They are not only valuable

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for their mohair and brush-consuming proclivities, but are rapidly becoming known as first-class mutton. The goat has always been used for meat by many people, but since the Angora has been introduced here and crossed with the common Mexican goat, all classes of people are beginning to use Angora venison. Certain residents of the coast districts created a prejudice against goat meat in the early days by using the tough Mexican goat, but there is a vast difference between the Angora and the Mexican goat as regards the flesh of the two animals, as well as in mohair. Some first-class hotels and restaurants are now paying exceptionally high prices for Angora meat—known as Angora kid—to serve to their best customers. All persons who have been so fortunate as to have had the opportunity of eating a piece of this meat pronounce it far superior to mutton or beef. Its highest merit as a human food is the fact that the Angora is never afflicted with the many flesh-poisoning diseases so common among other animals. When an Angora goat gets sick he either dies or entirely recovers in a few hours. He very rarely gets sick and never suffers from lingering diseases. Goat breeders often hear people say that goat meat is the best meat they ever ate, not knowing at the time what kind of meat they were eating.

The Angora usually subsists on very pure food. They are very particular about the cleanliness of their food, and they will not eat any filthy substances or grasses that have been trampled over by other animals, if they can get cleaner vegetation. Owing to these facts—and they are absolute—and to the natural adaptability of our climate and splendid range facilities and advantages, together with the rapidly increasing knowledge of this beautiful animal, there is no doubt that a large portion of the hitherto worthless lands in many parts of California will soon be put to good use through the Angora goat industry. This industry has become a staple one, and will no doubt soon become a leading one on this coast.

GET GOOD STOCK.—Persons inexperienced in the business, and those who may engage in the industry in the future, should be careful in buying goats for breeding purposes. It would be well to purchase male goats from experienced breeders, and so evade the mistakes all breeders are anxious to avert, namely: getting impure animals from some person new in the business who may be allowing imperfect breeding. Almost all old established breeders, by close observation and practical experience, have learned how to breed to points of perfection, both as to mohair and the general make-up of the animal. Unqualified breeders will often breed to gain some particular point, regardless of more important qualities. By so doing breeders often make mistakes which they afterward sorely regret. Hence it would be advisable to buy from foundation stock, and thus avoid the annoying and expensive mistakes here referred to.

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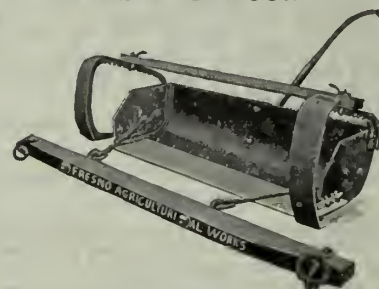
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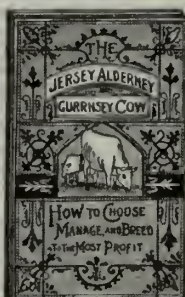
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## THE VETERINARIAN.

### Abscesses and Wounds.

From a paper by Dr. J. B. ROSSON at the Farmers' Institute at Tulare.

The streptococcus is a bacillus which, when it enters an abrasion or cut, produces symptoms of a most dangerous character. It travels rapidly, and wherever it goes causes a rapid development of pus, which forms deeply in the tissues and produces a violent fever and great depression. Incisions must be promptly made and the pus drained out. Procrastination will surely and quickly result in death. The pus cavities must be irrigated with an antiseptic solution, then with plain hot water—not hot enough to scald. Many people and animals have been killed by the streptococcus entering a small abrasion.

The Staphylococcus is a bacillus which causes abscesses, which do not have a tendency to travel in the tissues as in that of the streptococcus. The ordinary hard abscess in the skin with only a "core" is the kind caused by this bacillus. They are not so dangerous as the streptococcus. The two, however, are sometimes found associated with each other. We might, then, call this a mixed infection. These bacilli sometimes—the streptococcus especially—get into the lymphatic glands and cause inflammation and supuration of these. The veins sometimes become infected and inflamed; thrombus, or clot-infected with these bacilli, forms in the vein; the venous circulation is impeded; the parts from which the vein comes swell, and the function of the part is destroyed. Sometimes a little clot (embolus) will be broken off the thrombus. It passes to the right side of the heart and blocks the pulmonary artery and produces sudden death. If it be too small to block the pulmonary artery, it may pass to a small artery of the lungs and cause an abscess of the lungs. Death has been brought about in this way as a result of a very small infected wound.

**WOUNDS.**—Small abrasions of the skin near the hoof of an animal may result in lockjaw. There are many cases in which an abrasion is not discovered. Lockjaw sets in, and it seems a wonder that it has occurred. By closer examination of the animal an abrasion will be found somewhere, and generally near the hoof or in the bottom of the foot.

There is a tendency with people in the case with wounds from barbed wire to leave the wound open, and allow it to heal by granulation. There is great danger of infection in such a case. A fly whose feet and legs may be infected by coming in contact with bacilli in a poison may alight on a fresh sore and infect it. Inflammation of a severe character may set in and large quantities of pus form; the underlying tissues may be attacked; phlegmonous inflammation proceeds rapidly, and the system as a whole may become infected, thus causing the formation of abscesses in other parts of the body, which may kill the animal. An abscess infected with the streptococcus near the root of the tail may cause a fatal abscess of the liver. The bacilli get into the portal circulation and pass to the liver, and in this way large quantities of pus may form in that organ. The case is then apt to be fatal, as abscesses of the liver cannot be so readily reached and

drained in the animal as in man, in whom that organ is more superficial.

**ANTHRAX.**—It is probably through abrasions that most of the cases on anthrax are caused. The anthrax pustule, the mildest form of the disease, should be thoroughly scraped or even seared with a red-hot iron to prevent systemic poisoning from the bacilli in the local disease. All sores or pustules should be antiseptically treated in order to prevent the system from becoming infected. They should be protected to prevent flies from alighting on them and carrying the poison to some other animal. The little abrasions should receive as careful attention as if they were of large size. A most rapid systemic poisoning may take place in the case of these small abrasions. People and animals have been destroyed in this way in a very short time. They are excellent gateways for the entrance into the blood and tissues of bacilli.

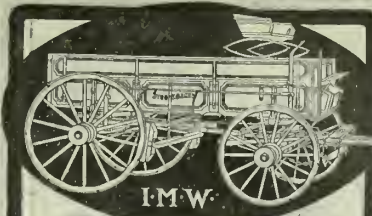
**LUMPY JAW.**—There is another disease that demands the attention of farmers as well as all other classes of people, for the reason that it attacks both man and beast. I have reference to actinomycosis, or commonly called lumpy jaw when speaking in reference to cattle. It is almost unmanageable when it occurs in cattle or other animals. The animal should be killed and burned. People sometimes contract the disease by chewing straw, as is not uncommonly done by farmers and their boys. Little do they know how dangerous such a proceeding is. Once this bacillus gets a foothold, it is impossible, almost—even in the early stages—to stop its ravages. It is one of the most formidable diseases by which animal or human can be attacked. Even when thoroughly removed it sprouts up again, and generally continues until death relieves its victim.

**FISTULA.**—This is a disease in which a hard swelling not unlike a carbuncle makes its appearance on the weathers at the point of the shoulder blades. Little holes extending to a considerable depth are found. These never heal until the treatment is applied to the entire course of the tube. Such remedies as arsenic are sometimes introduced deeply by means of a capsule. This is a slow process. The best method is to split with a knife a tube to the very bottom. When split open and thoroughly scraped, and antiseptics applied, it may be stitched so as to thoroughly unite the parts so that healing by first intention may take place. The safest way in the animal, however, is to pack the parts with iodoform gauze, dress them with the same daily, keeping the parts well cleansed, and allow it to heal by granulation. They will soon cicatrize and get well.

On the first appearance of this disease or poll evil it may be aborted by burning. The way I have cured my own horses is to thoroughly saturate the hair with turpentine first; then I take a flannel cloth, double it, wet it thoroughly and squeeze it. I apply this over the parts which were saturated with turpentine, and then take a hot smoothing iron and apply it as I would in ironing a garment. I burn it well. The parts to which the burn is applied are very apt to slough out, but it heals by granulation, needing no attention except simple cleanliness. The disease will be aborted by this plan. I have aborted it after it had existed three weeks.

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven catarrh to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O. Sold by Druggists, 75c. Hall's Family Pills are the best.

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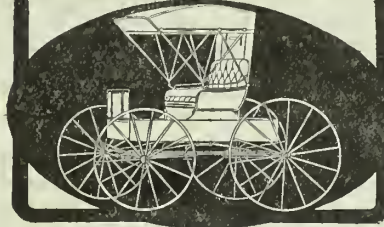
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The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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## ENTOMOLOGICAL.

## Prof. Woodworth's Work with the Southern Mites.

As our readers already know, Prof. C. W. Woodworth of the State University is now in southern California studying red spiders or mites, and we understand he is finding out some very curious and important facts of which we shall have detailed account in due time. We notice that Prof. Woodworth recently gave a little informal talk at the recent meeting of the San Dimas Horticultural Club, of which an outline appears in the Covina Argus. It will be found interesting.


**THE NEW SOUTHERN MITE.**—The spider is a new species and is not described in existing books now common. It is a different spider than that found in the greenhouses in the East and on the almonds and other deciduous trees in the northern part of the State and also to those found in Florida. A mite belongs to the group of spiders and not insects and we therefore find it is a difficult creature to treat with insecticides. A peculiarity of the eggs of this mite is that they are onion shaped. It is the only one known that does not lay round eggs. When the egg hatches it does so by splitting around its equator and leaves the top almost in the same place anchored by the tiny web threads which run from the onion-top like guy ropes to a derrick. The young mite when first hatched has six legs, but afterwards acquires two more; in every other particular it is like the adult. The egg after being deposited hatches in about seven days and the young mites go through three moulting processes, each time shedding their skins, which are left on the leaf, causing the white powdery stuff which is shown on their surface where the spider is present. This moulting period consumes about fourteen days and in about two days more the mite begins to lay eggs. Allowing for variations, the line from egg to egg runs from twenty to thirty days.

**HOW THE MITE WORKS.**—The mite injures the plant in but one way—by feeding on the green matter in the leaves. Its feeding apparatus is attached to a head-like projection on the front end of the mite in which a knife or lance is fixed, and underneath are two long and slender feeders. It pulls the head part back into the body, sets the lance in the leaf and then releases the muscles, giving a forward thrust to the lance, and this makes the cut into which the feeders are inserted and the mites absorb the sap. They feed rapidly and will soon cause a leaf to take on a grayish appearance. The rate of increase is very great. The females lay about three eggs per day, and probably continue laying for ten days. From observations made, a single mite, if unmolested, in four months would increase about 1,000,000.

**SPRAYING.**—Spraying, with formulas now commonly used, is the best known method of destroying them, but as nothing has been found that will destroy the eggs, several sprayings at close intervals are necessary to get rid of them completely and of course it is a difficult thing to spray every part of a tree and every mite. Probably the best results can be had by spraying three times; the first two times one week apart and the third time two weeks later. A heavy spray is best in order to drive the spray through the web which comes from the spider. Flour sulphur dusted on the trees in the north is very effective with that kind of spider, but it is not known what effect it has on this spider.

A number of predaceous insects feed on the spider and their eggs, notably the ladybirds. It is not yet known that fungous diseases attack these spiders, but such may account for their sudden disappearance from some orchards. Fungous diseases are very effective, when they occur, in destroying insect life.

Finer than salicylic acid is the membrane lining the bowels. A little irritation of it produces griping and diarrhoea. Stop the trouble with Perry Davis' Painkiller. No honest druggist will deceive you with a substitute.



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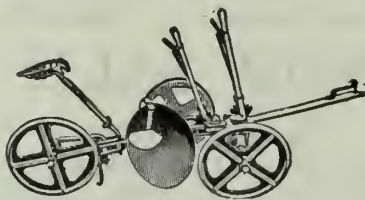
## Curing Alfalfa Hay.

G. W. Pearson, the Fresno hayman, in speaking of the prospective hay crop, remarked to a Republican reporter that it all depended on the way the farmer cared for his hay. There is not a great deal made out of hay, and many farmers are therefore indifferent in curing their hay.

By piling it in small stacks or stringing it out with a buck rake, the top is left to sunburn and the bottom to become mildewed. In a month or so it is baled and then the bales are allowed to lie on the ground until the bottom side is rotted and the top damaged by occasional showers.

Alfalfa, after being cut, should be thoroughly raked, because, if not, there will be left enough dry foxtail to spoil the second cutting. In a drive in the country I saw an alfalfa field in which the foxtail had been cut three weeks ago, but it is not yet raked up.

Now as to stacking. A stack of say 22 feet wide at the bottom should be 27 feet wide at the top and not less than 30 feet high. Instead of that, some get the dimensions twisted around—30 feet at the bottom, 27 feet at the top and 22 feet high—thus exposing all sides to moisture. Instead of realizing \$10, the farmer will get only \$7 for his hay.



The new Benicia-Hancock disc plow put out during the past season proved to be an unqualified success. In view of past failures on the part of Eastern manufacturers, the Benicia Agricultural Works may feel proud of their product. More were sold than anticipated, for the public had begun to think that the disc did not make a good plow. It is safe to assert that no disc plow can be a success unless made under the Hancock patents, which have just been sustained in an injunction suit brought against an imitator. Baker & Hamilton have established agencies over the greater part of several States. Write them at San Francisco, Cal., for particulars.

EVERY woman who takes an interest in having the washing nicely done should have a copy of "Modern Methods and Valuable Recipes for Domestic Laundry Work." It is published by Dodge & Zull, Syracuse, N. Y., and can be had for six cents in stamps. The formulas for hard water, starching, stains, etc., are up to date and very valuable.



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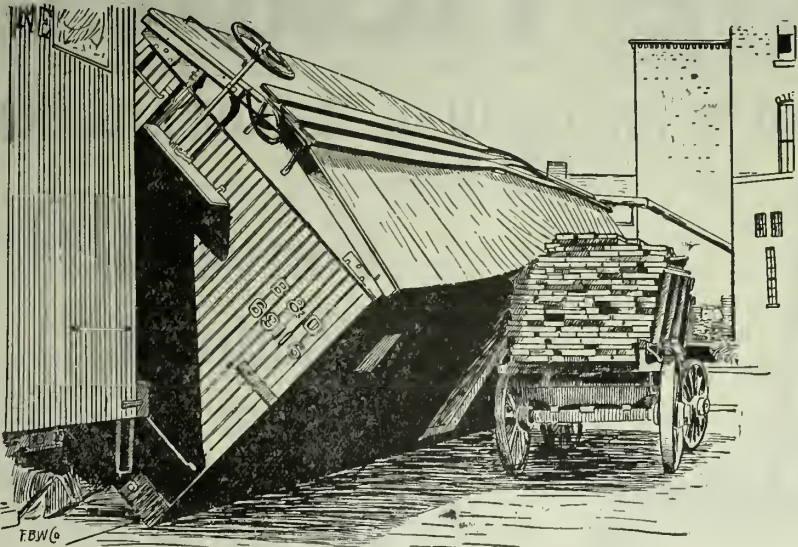
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## An Object Lesson.

In the cut accompanying this article will be seen a large freight car over-

duction from a photograph taken a few moments after the accident occurred, shows that the car was stove in on the side and that the roof is torn loose clean



turned and resting upon a loaded wagon. This accident occurred recently in the freight yards of the Studebaker Bros. Mfg. Co. of South Bend, Ind. The wagon, which is a standard Studebaker, happened to be standing in a way to catch the full force of the impact from the overturned car. It will be observed that while the wagon is itself heavily loaded with lumber, it sustained not the slightest injury. The car, however, did not escape so easily. The cut, which is a strict repro-

duction from a photograph taken a few moments after the accident occurred, shows that the car was stove in on the side and that the roof is torn loose clean up to the center, where even the running board is displaced and broken. If the reader will note the next freight car he sees how thoroughly they are timbered, framed and braced with hard wood and iron, he will understand just what amount of shock this wagon was compelled to stand. This peculiar accident serves to show in a much better way than it could be otherwise stated just how strong and thoroughly dependable the Studebaker wagons are.

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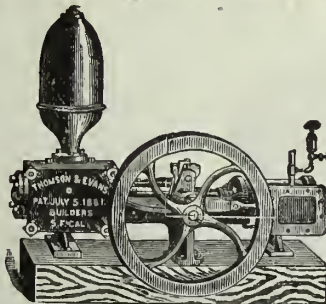
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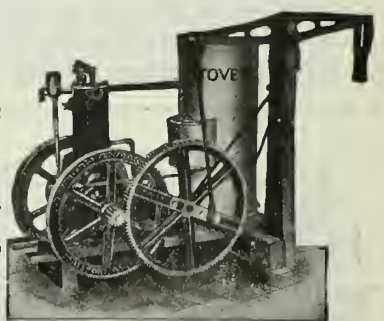


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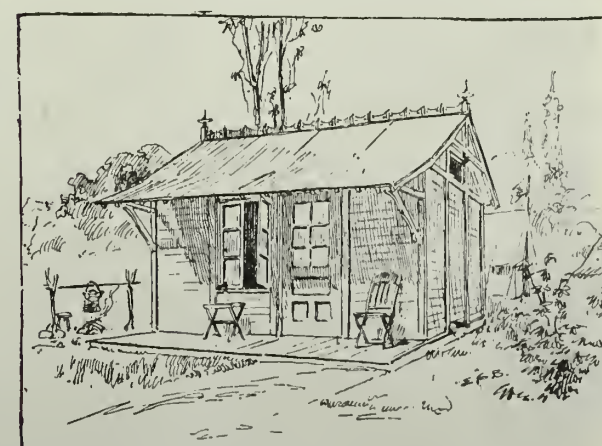
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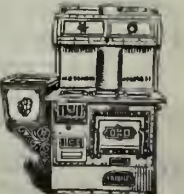
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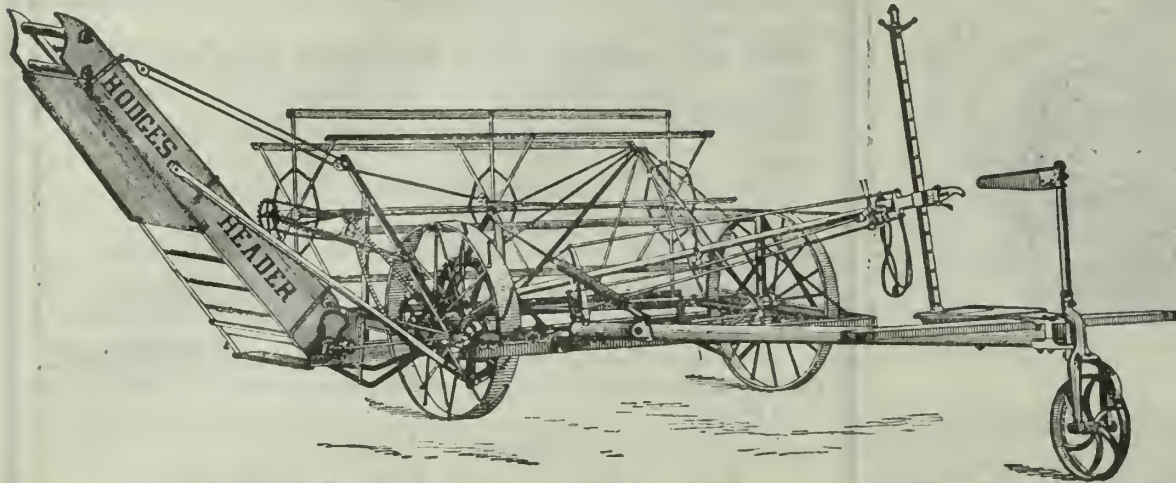
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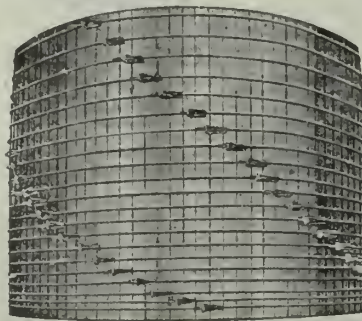
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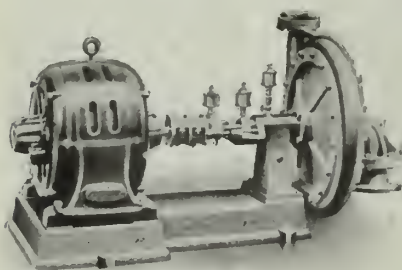
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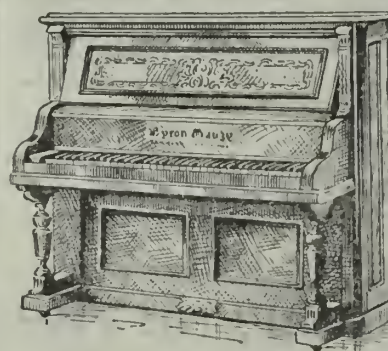


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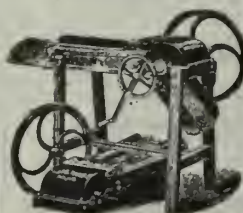


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# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 24.

SAN FRANCISCO, SATURDAY, JUNE 14, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

### Reclaimed Tule Lands.

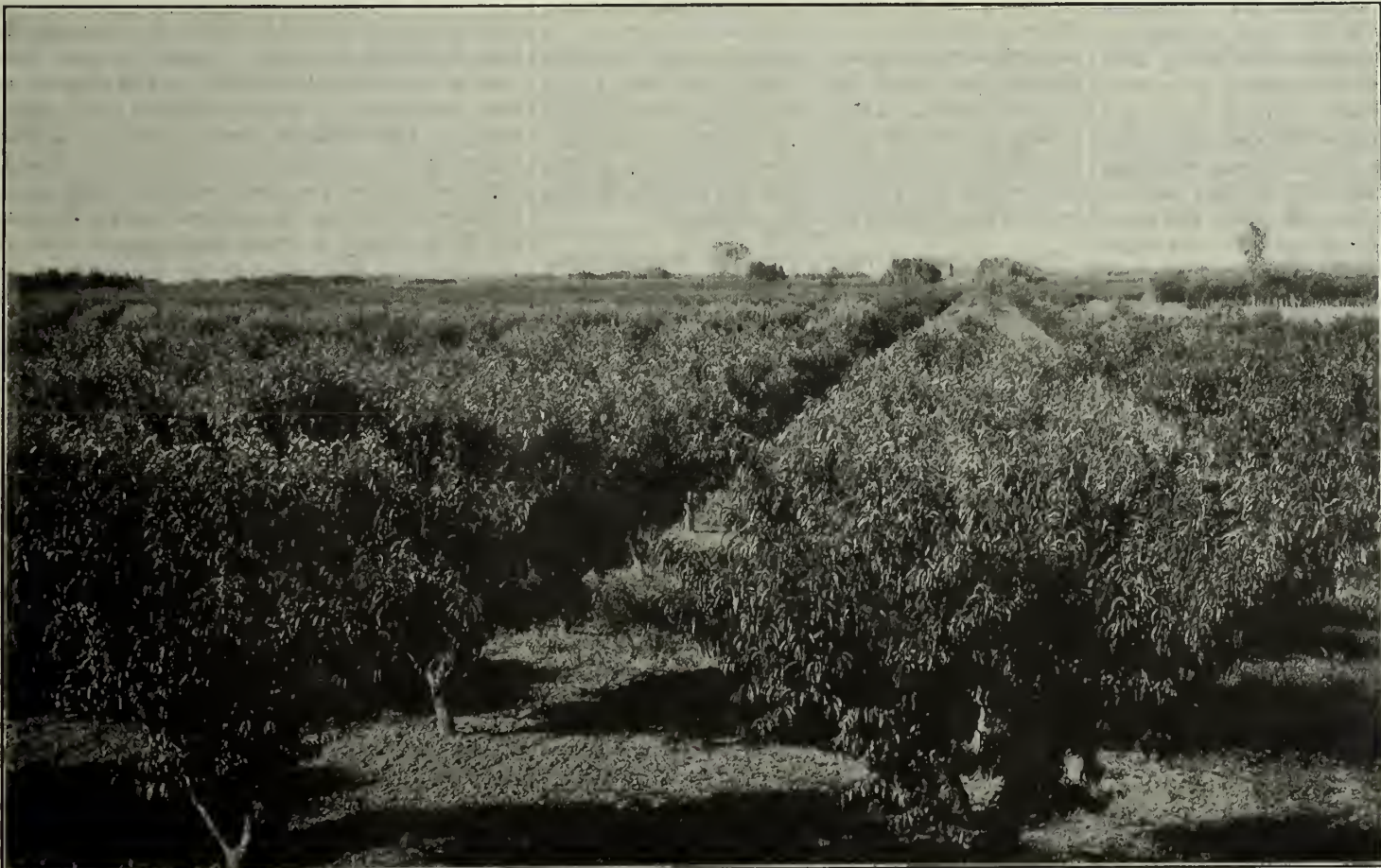
The reclamation of rich land from the grasp of overflow has long been a great issue in the development of the deltas of the Sacramento and San Joaquin. Much has been done, and yet only a beginning has been made. The contrasting views on this page are from the Sunset Magazine and illustrate well the very significant remarks made by Mr. Frank Miller of Sacramento at a recent reception given by residents of the capital city to an excursion of business men from San Francisco. He said: "One million acres of the finest land known to the world which border the Sacramento and San Joaquin valleys are now subject to overflow, but can be reclaimed. One-tenth of our people and one-tenth of our assessed values, as a State, are directly interested in these low-

claimed at a cost of about \$20,000,000—say \$100 per acre. You may ask if the remaining 1,000,000 acres should be reclaimed even at the same or greater

levees, armed and equipped with pumps and dredgers as big as men-of-war. They are like so many forts standing against the common enemy—the floods. The



A View of Tule Lands Before Reclamation.



Peach Orchard on an Old Reclamation, Near Stockton.

lands. When reclaimed, these lands will add 100,000 to our population and \$100,000,000 to our assessable values. Already about 200,000 acres have been re-

claimed at a cost of about \$20,000,000—say \$100 per acre. You may ask if the remaining 1,000,000 acres should be reclaimed even at the same or greater

ough work. The enterprise will certainly be realized at some future time, and the present promise of co-operation and increased interest will hasten the time.

men of these districts held a convention here lately and agreed that they were old enough and strong enough and rich enough and wise enough to work together. They appointed a committee of twenty-four to prepare plans for co-operation in the reclaiming of these 1,000,000 acres. In the name of that convention and of these swamp land owners, permit me to urge our guests to study this most important section of the State. History will finally record here triumphs of engineering which shall exceed those of the Congos, the Nile, the Mississippi and even of Holland."

Such is a comprehensive view of reclamation opportunities and possibilities. The enterprise requires large capital, good engineering and thor-



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E. J. WICKSON. .... Horticultural Editor

San Francisco, June 14, 1902.

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## The Week.

The city is quite given over to the joys of hospitality and demonstration. The streets are full of the insignia of the Mystic Shrine; electric lights are carried higher and distributed more intricately than ever before, and everything thinkable is being done to manifest welcome and interest in the city's guests. What will remain to be done next month, when even a larger fraternal assemblage will occur in our city, only the event can show. These city conventions drawing attendance from all parts of the United States are an influential means of making California better known and thus have a value wholly apart from the individual pleasure and national acquaintance and homogeneity which they promote.

Wheat has been quiet and rather weak, both for spot and futures, but is a shade better as we go to press than for a few days back. Two ships have gone to Europe. Barley is dull and unchanged; there is little coming in, but buyers are holding aloof even from this. New oats are coming by sample and the tendency is downward. Corn is quiet and beans slow, but they are held as last week, above the equivalent of the Eastern prices. Bran, middlings and rolled barley are all easier and the last takes a lower range. Choice old hay is still scarce and firm; small receipts of new hay are good, but are taken slowly. Second quality beef is a little easier; other meats are unchanged. Hogs are in fair receipt—just about enough for the moderate local demand. Butter is unchanged and rather quiet; medium grades tend toward weakness; the best and the cheapest are stronger. Cheese is steady. Eggs are held as before: there is an upward tendency on fancy but they are not very active. Poultry, on the other hand, is active and firm—principally chickens. New potatoes are easier, but there is still good demand for choice. Onions have risen sharply: receipts here are light and Eastern shipments are going from interior points. Fruit supplies are ample and prices easy. Dried fruits are still being cleared up and the outlook is promising: even prunes are looking better. Honey is dragging and there is little coming in. In hops there is only talk. There is to be a wool sale in Ukiah next week and it bids fair to be lively. At this point there is only small local trade, and no Eastern movement.

The effort of the growers of the Sacramento river section to firmly establish in this city sales of produce by the growers' agents is a measure of much interest and importance. We publish on another page an exhortation to others to stand in and support the project. In this way alone can it succeed. There is

not much use in abusing the commission merchants for taking all they can get for their services. It is idle, also, to complain that they are doing what they can to prevent the success of the growers' agency. People are not in business for recreation, nor are they working early and late to give others an easy way to succeed at their expense. The commission men may be expected to do everything they can to get trade and to discourage growers from getting it, and there is very little use in scolding about it. If they break the peace there are remedies prescribed. So far as trade issues and competition go, the growers need expect no favors nor should they ask any. If they are strong enough to meet the difficulties and secure agents who are able to cope with the old line receivers in business brawn and bluff, they will succeed. Our interest and sympathies are certainly with them, and so much as we can do by setting forth facts and sound economic principles, as they may occur to us or to other friends of co-operative effort, we shall always be glad to undertake. But we are not disposed to undertake a campaign of idle denunciation and senile scolding, because it avails not a whit. The way for the farmers to do business on their own account is to do it. Even a small demonstration of success inspires more interest and confidence than a whole Pelee-burst of co-operative campaign oratory. The time for actually doing something was never better. Much is actually being quietly accomplished in co-operative efforts. We are getting more work and less wind into the undertakings and the results will soon be surprising.

It has been freely announced by some of the bogus butter firms that they propose now to keep within the new law and sell a white-fat substitute for butter upon its merits, counting that the infinitesimal tax will enable them to sell so low that people will choose white fat instead of yellow butter. It is reported that they will furnish a little capsule of color to those who wish to make the stuff yellow after they get it in their kitchens, because nothing can prevent the consumer from coloring his own food any shade he likes. It has been always contended that if oleomargarine would come out in the open and not masquerade in the semblance of butter, the dairyman need not fear it, but there is a vigor in the announcement of the oleo men that leads those interested in the real thing to fear that there is more in the effort than appears on the surface, and they propose to see that the oleo people practice what they preach. The local butter dealers and the Dairy Bureau propose to meet the aggression of the oleo men as vigorously as the occasion may be seen to demand. The whole question is interesting and important. If people really wish to eat white fat instead of butter the dairyman cannot help it, but he will have to eat it on the square. As for the coloring after buying it strikes us that there is little but gammon in that. If ordinary cooks and kitchen appliances can get the color evenly into white fat after the churning is over we have a surprise in store for ourselves.

The grasshopper trouble continues. Our last issue, reviewing ways to meet the advancing pest, has been in wide demand. There has been a rush for poison, which temporarily has doubled the price in interior towns, and mechanics have been busy with the various crushers, burners and dosers. The University has two men in the field this week, who are doing all they can to help people. Prof. Woodworth has been in the country east of Tulare and Fresno and Mr. Clarke in Placer and Sacramento. Great obstacles are encountered because proper destructive treatment cannot be applied to the breeding grounds. The existing state of things is outlined in the following paragraphs from a report which Mr. Clarke makes to Prof. Hilgard just as we are going to press.

Near Roseville the breeding ground covers some 3000 acres, more or less, of untillable, rocky land, which is used for pasture purposes, and is of small value for this, renting, as it does, for 15 cents per acre annually. This pasture land is literally swarming with young hoppers, which have not yet attained to wings. It will be June 15 to 20 before the main portion of the swarm gets its wings. In the meantime a steady movement towards the south and southwest can be seen, and the army is advancing 200 or 300 feet a day in the direction noted. The section threatened has a crop value this year of \$150,000. The pest is the true migratory hopper.

At a well attended meeting it was decided to try to get the permission of the owners of the pasture land to burn over the breeding grounds. Failing this, then a strip 100 feet wide was to be bought up covering the face of

the army, this strip burned over and then a dozen or so "hopper-dosers" put to work on it. But later the suggestion was made that it was the duty of the County Board of Horticulture to suppress the hoppers in the breeding ground. However, the Board, after consulting lawyers and after much study of the situation, finally decided that the proposed work was so entirely without precedent and their own personal liability in case of damage so great they would at present do nothing. In the meantime the fight will probably narrow down to each individual doing what he can with poisoned baits, etc.

This represents the situation everywhere. Either the Constitution of the United States or some other bulwark of liberty makes it dangerous for an officer to invade private property and such officers and bondsmen are timid. There ought to be some way to stamp out these pests on their breeding grounds and if existing law for it cannot be found it ought to be made.

## QUERIES AND REPLIES.

### Three Suburban Torments.

TO THE EDITOR:—I have a delightful place of twenty-five acres of wooded hill land in San Rafael. It would be a perfect paradise but for three evils—mosquitoes, poison oak and gophers. If you could give me some advice how best to fight these evils on an economical basis it would be a great help.—SUB-URBAN, San Rafael.

Your letter shows that you have come face to face with the same propositions that confront other suburban residents. There is no established way to overcome the three evils which you mention. Much has been learned recently about reducing mosquitoes by pouring a little crude oil on the ponds and other places where they multiply. It takes very little oil to make a film upon standing water, and this is destructive to the larva, so that the race of mosquitoes is cut off. The fullest information on this subject is contained in publications by Dr. L. O. Howard, Chief of the Division of Entomology of the U. S. Department of Agriculture, Washington, and any one interested in the mosquito problem should secure these publications.

Poison oak can be only reduced by grubbing out persistently, and nothing known to us but grubbing tools are able to cope with it. In short, the land must be cleared of poison oak, and then constant watchfulness for new shoots, which in their turn must be eradicated.

Gophers are an evil which yields only to intelligent and protracted effort. They may be attacked by forcing sulphur smoke or bisulphide of carbon vapor in the run-ways; they may be poisoned by inserting crystals of strychnine in small pieces of fruits or vegetables and introducing these into the run-ways; they may be caught in traps or caught by cats, which may be encouraged to multiply for this purpose, and they may be shot. Successful gopher killers employ nearly all these methods, first one and then another, as conditions seem to require. On a piece of land of twenty-five acres you could employ a man most of the time in grubbing the poisoned oak and in checking the gophers. A great deal depends upon the quickness and intelligence of the gopher man. He must study his problem and adopt his means to the conditions which prevail. On some of the fruit ranches men are continuously kept at this work and they become very efficient at it.

### Bean Feeding in Santa Barbara.

TO THE EDITOR:—As it is so hard to get cotton seed meal, I think I will try to get some farmer to raise some Soy beans to furnish the required protein. Can you tell me what variety is best for this locality and what kind of soil they will do the best on?—COW FEEDER, Santa Barbara.

Soy beans are not well suited for ordinary California conditions and local experiments would be necessary before it would be at all safe to put in a crop. At present they are only successfully grown on moist low lands near the San Joaquin and Sacramento rivers, where they have not only moist soil, but atmosphere rendered somewhat humid by adjacent large bodies of water. They are not a success in some places where other beans are grown. For this reason it would not be safe for you to trust to them as a source of protein without preliminary trial as to growth and product. Why is it not possible for you to get abundant protein by using the imperfect or stained beans which must be available in considerable quantities in such a large bean producing region



as that of Santa Barbara and Ventura? Any damaged beans, free from dirt, would be about as good as Soy beans for the purpose you have in view. Sometimes large quantities of stained or inferior beans are sold in San Francisco for feeding purposes and are used both by cow feeders and poultry feeders. They are cheaply ground into a coarse meal and after soaking over night become valuable for mixing with other feed. It seems to me this material could be obtained in your district much more cheaply than Soy beans could be grown, even if perfectly well adapted to local conditions.

#### Treatment for Leaf Lice.

TO THE EDITOR:—Enclosed please find sample of leaf badly infested with lice. This is the same species I sent you about a year ago, and at that time you indicated that the pale green worms which were among them would finally exterminate the pest; but it seems they are much worse this year. We have several hundred apple trees affected. What is best to do?—THOMAS MEE, Napa county.

The specimen you send shows that the lice are being preyed upon by *Syrphus fly larvæ*, just as they were a year ago. These beneficial insects do not succeed in exterminating the lice, but they fortunately reduce them so much that spraying is not warranted. If, however, the lice multiply rapidly and begin to cover the undersides of the leaves, it is often necessary to spray to prevent the curling of the leaves, the dripping of honey dew and the growth of smut, because, although these beneficial insects will win in the end and destroy the lice, before that is accomplished much injury may be done to the tree and to the fruit. The proper remedy then for the lice is the prompt use of the kerosene emulsion, and in case you may not have the formula at hand, we transcribe it as follows:

Take kerosene, two gallons; common soap or whale oil soap, one-half pound; water, one gallon. Dissolve the soap in the water and add it boiling hot to the kerosene. Churn the mixture by means of a force pump and spray nozzle for five to ten minutes. The emulsion, if perfect, forms a cream which thickens on cooling. Dilute before using one part of the emulsion with nine parts of cold water for scale insects; but for plant lice one part of emulsion to fifteen parts of water will work effectively. To obtain this emulsion in proper form, violent agitation is necessary, the time required depending on the violence of the agitation and temperature of the mixture. Prof. Cook's formula is this: Dissolve in two quarts of water one-fourth pound of hard soap by heating to the boiling point, then add one pint of kerosene oil and stir violently from three to five minutes. This is best done by use of the force pump. This mixes the oil permanently, so that it will never separate. Add seven pints of water, and the wash is ready for use.

This remedy will reduce the lice, if sprayed with a Cyclone nozzle, so that the force can be directed against the underside of the leaves. It will not injure the foliage nor the fruit, if the emulsion is prepared properly in the first instance. This prescription is to be used for lice on plum, peach or any other tree or plant infested with them.

#### Cleaning Bark of Fruit Trees.

TO THE EDITOR:—My French walnut trees, now seven years old, begin to show orange colored and light green moss. Where it is present the bark looks tight and less healthy. Can you give a remedy? Some say spray with lime and water, but I have always thought that whitewashing bark closes the pores and does injury. What shall I do for the moss and when?—WALNUT GROWER, Sonoma county.

The presence of moss and lichens on the bark of fruit trees is a detriment to them. It has been determined by careful observation that these parasites produce tightness and brittleness of the bark, which is not desirable. The treatment is to spray during the winter time with one pound of caustic soda or potash to six gallons of water. This is rather a weak spray, but it is effective in cleaning the bark without danger of injury to it. Whitewash is not injurious to the bark of fruit trees, and it is in fact the best way of protecting the bark against sunburn; but for the cleaning or removal of parasitic growths the alkaline wash is better.

#### Black Mustard.

TO THE EDITOR:—What is this plant which we find growing in our garden during the winter? Stock, including chickens, eat it. Has it any forage value? Where can seed be obtained? What is its name?—WM. GEORGE & SONS, Nevada county.

It is black mustard (*Brassica nigra*). It is usually

counted a weed. Although stock will eat it to some extent it is not desirable, because it flavors animal products. It makes milk bitter and we imagine eggs might show a wry flavor if hens had too much of it. You can probably produce on your own place more seed than you want unless you keep it closely cut down before blooming.

#### Too Soon to Thin.

TO THE EDITOR:—I have an olive tree medium size in my garden that is set very full of olives like the sample inclosed. Will you kindly tell me what to do with it? Am I to thin out? I take very good care of tree, by cultivation, water and fertilizer.—AMATEUR, Oakland.

What you take for olives are the unopened buds of the incoming bloom and the specimen you send shows that your olive tree is apt to bloom very freely. Whether the set of fruit will be at all commensurate with the bloom is still a question. The common experience is that only a small part of the blooms of the olive prove to be effective. You will, therefore, wait to see how heavy a crop is set before you think of thinning. Thinning will undoubtedly increase the size of the individual fruits with olives as with other fruits, but no thinning has been done hitherto because the cost of the thinning would be altogether out of ratio with the increased value of the larger fruit. Of course, in garden culture for one's own use this would not be much of an obstacle, and, within the limits of the variety, you can improve the size by thinning if the set of fruit should be very heavy. You could not, however, make a large olive if the variety is naturally small.

#### Paris Green Not a Dose for Sucking Insects.

TO THE EDITOR:—Please tell me if what is left of Paris green water, mixed at the rate of one pound Paris green to 200 gallons of water, for killing woolly aphid on apples, is good to destroy rose bugs without harming rose bushes?—CONOPHILIST, Saratoga.

Paris green is of no use for woolly aphid: perhaps you mean that it has been used for codlin moth. It is also of no avail for "rose bugs," if you mean the small green lice which gather on the new growth. These, like the woolly aphid, are sucking insects and have no biting mouths which you can get poison into. If by "rose bug" you mean something which eats holes in the leaves Paris green will poison them, but you must use it very carefully on the rose both because people have a way of chewing rose leaves and because what is left from spraying is apt to be stronger than that which is sprayed out and rose leaves are burned by it.

#### Curl Leaf and Shot Hole Fungus.

TO THE EDITOR:—Can you tell me what is the matter with Muir peaches, samples of foliage of which I enclose? The peaches are about as big as marbles and are all falling off.—W. L. SHREVE, Lower Lake.

Your peach leaves have curl leaf and shot hole fungus; the former in these specimens evidently being the greater evil. This is all we can tell from a few leaves. When curl leaf is very bad the fruit is apt to fall. The remedy for both curl leaf and shot hole fungus is a good spraying with Bordeaux mixture just before the buds open. It is probably too late to save this year's fruit. If the trees are in good condition otherwise they will bring out a new lot of healthy leaves and make a fair new growth. But, as we recently remarked, there is something else the matter with the peach this spring in some districts. We are of the opinion that the prevailing low temperature has checked the growth and favored the leaf diseases.

#### A Camperdown Elm.

TO THE EDITOR:—I saw on the University grounds a low tree with a round head and weeping branches drooping on all sides and overlapping each other, so as to make a perfect canopy of foliage. It seemed to me the most beautiful natural summer house I ever saw and I would like to have one on my lawn.—READER, Sonoma county.

The tree is a Camperdown elm (*Ulmus scabra*, var. *pendulina*). These rounded drooping trees are made by grafting the species upon the stem of another elm. You can buy such trees of the nurserymen. They are not uncommon, as they are seen in many parks and suburban gardens; but it takes a good many years to reach such development as the University specimen shows, for it was planted in 1874.

## WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 9, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

#### SACRAMENTO VALLEY.

The weather during the week has been warm and favorable for all crops. Grain is ripening rapidly and harvesting is in progress in some places. Haying is nearly completed in some sections and progressing rapidly in others. The yield is heavy and the quality above average. Pasturage is plentiful. Grasshoppers are causing uneasiness to farmers in Sacramento, El Dorado and Placer counties, but no great damage to crops has yet been reported. The rain of last week caused very little damage to fruit. Deciduous fruits are in good condition, but ripening rather slowly. Raspberries, blackberries, strawberries, cherries and apricots are becoming plentiful, and all are of excellent quality. Grapes are in splendid condition. Citrus fruits continue thrifty.

#### COAST AND BAY SECTIONS.

Warm weather followed the rain of last week, greatly benefiting all crops. The damage to fruit and grain was less than anticipated last week. Grain is making good growth and heavy crops are probable in the central and northern counties. Haying is progressing rapidly. In Sonoma county the hay crop is reported very heavy and clean, probably the best ever grown there. Hops, corn, beans and vegetables are making rapid growth. There will be a large acreage of potatoes in the vicinity of Peachland. Pears are badly damaged by blight in portions of Sonoma county. Early deciduous fruits are ripening rapidly and good crops are expected in most sections. Cherry canning has commenced in some sections. Grape vines are in excellent condition and heavily laden. Citrus fruits are doing well.

#### SAN JOAQUIN VALLEY.

Warm days and cool nights have prevailed during the week and all crops have made good growth. The damage by rain at the close of last week was less than estimated. Grain continues in good condition in the central and northern counties and a fair yield is expected. Barley and oats are being harvested in some sections and wheat will soon be ready for harvest. Grain in the southern districts is being cut for hay. Haying is progressing and the crop is turning out very good. Grasshoppers are causing considerable damage to grain in Fresno, Amador and San Joaquin counties, but have not yet attacked fruit orchards. With the exceptions of pears, deciduous fruits are in excellent condition, maturing rapidly, and will yield good crops. Grapes are very thrifty. Citrus fruits are doing well.

#### SOUTHERN CALIFORNIA.

Clear, warm days and foggy nights have prevailed during the week, making conditions favorable for all crops. Haying continues and is nearly completed in some sections. The yield is reported fully up to expectations. Wheat and barley are maturing and fair crops will be harvested in some localities. Harvesting has commenced in the country back of San Diego, where grain promises an excellent yield. Beans and sugar beets are making good growth. Walnuts are doing well and the yield will be nearly average. Apricots will be light. Other fruits and grapes are in good condition. Irrigating water is becoming scarce in Orange county.

LOS ANGELES SUMMARY.—Weather hot in the interior during the last few days. The farmers are busy irrigating and pumping plants are running full capacity. Oranges are about cleaned up in places and a fair crop set for next season.

#### Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 11, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	.00	51.88	47.58	42.91	64	52
Red Bluff.....	.00	31.75	24.64	24.50	98	60
Sacramento.....	.00	17.95	30.21	23.41	94	54
San Francisco.....	.00	18.98	21.17	24.78	61	48
Fresno.....	.00	6.85	11.33	13.12	108	56
Independence.....	.00	4.34	6.17	5.53	94	56
San Luis Obispo.....	.00	21.95	31.14	17.42	82	44
Los Angeles.....	T	10.57	16.29	17.50	78	48
San Diego.....	T	6.16	11.45	7.62	66	58
Yuma.....	T	.68	3.60	2.89	102	62

#### Practical Forestry.

This is the title of a new elementary book published by D. Appleton & Co., which will be very acceptable to those who wish to know what is meant by the terms "forestry" and "forestry science" which occur so frequently in current literature. It gives a very clear outline of the purposes and methods of the present movement for preservation of existing forests, for establishing trees on waste areas and of managing forest properties so that they shall be permanently productive instead of destroying their value by indiscriminate cutting and burning, as is now too frequently done. The writer of the book is John Gifford, assistant professor of forestry at Cornell University, and he has succeeded in presenting a large amount of pertinent information very clearly and succinctly.



## HORTICULTURE.

## Fruits and Field Crops in California.

From advance sheets of the Twelfth Census of the United States (1900).

**ORCHARD FRUITS.**—Of the farmers of the State, 27,491, or 37.9%, reported orchard fruits in 1899. The value of orchard products was not reported by the census of 1890, but in 1879 it was \$2,017,314, and in 1899 \$14,526,786, a sixfold gain in twenty years. In making comparisons between the crops of different years, however, it should be remembered that the quantity of fruit produced in any year is determined largely by the nature of the season.

## ORCHARD TREES AND FRUITS, 1890 AND 1900.

	—No. of Trees—		—Bu. of Fruit—	
	1900.	1890.	1899.	1889.
Apples.....	2,878,169	1,269,784	3,488,208	1,654,636
Apricots....	4,244,384	1,442,749	2,547,064	970,941
Cherries....	686,891	236,945	321,034	154,063
Peaches....	7,472,393	2,669,843	8,563,427	1,691,019
Pears.....	2,512,890	695,738	1,912,825	577,444
Plums and prunes....	9,823,713	1,509,833	5,632,036	1,202,573

The number of orchard trees increased in the last decade from 7,824,892 to 28,138,471. The most noteworthy changes were in plum and peach trees, which increased about sixfold and threefold, respectively. In 1890 34.1% of all fruit trees in the State were peach trees, and 19.3% plum and prune trees, while in 1900 the corresponding percentages were 26.6 and 34.9.

Plum and prune trees are found in the greatest numbers in the west central part of the State, more than one-third being in Santa Clara county. These trees increased so rapidly in the last decade that their number in 1900 was greater than the total number of orchard trees in 1890. Tuolumne is the only county in which the number of plum and prune trees has not increased since 1890.

The leading peach growing counties are Fresno, Placer, Santa Clara, Tulare, Tehama and Los Angeles. In 1900 they reported more than one-half of all the trees. Most counties reported a much greater number in 1900 than in 1890.

In the last ten years the number of apricot trees has more than doubled. Over one-third of these trees are in Santa Clara, Ventura and Los Angeles counties.

Apple trees increased in number 126.7% between 1890 and 1900. The coast counties report the largest numbers—Santa Cruz, Sonoma, Monterey, Los Angeles, Mendocino and San Diego counties having more than one-half of the total number in the State.

The adjoining counties of Solano and Sacramento contain one-fifth of the pear trees in the State. Nearly three times as many were reported in 1900 as in 1890. Cherry trees, also, show a large increase, but are relatively of small importance.

Unclassified fruit trees to the number of 520,031 were reported, with a yield of 228,176 bushels of fruit. The value of orchard products for 1900 includes the value of 2395 barrels of cider, 6339 barrels of vinegar and 117,935,727 pounds of dried and evaporated fruits.

**SEMI-TROPICAL FRUITS.**—The total number of semi-tropical fruit trees increased from 1,809,161 in 1890 to 8,996,459 in 1900. Of the number reported in 1900, 62.8% were orange trees, 17% olive trees, 16.6% lemon trees, 2.1% fig trees and 1.5% other trees.

## SEMI-TROPICAL TREES AND FRUITS, 1890 AND 1900.

	—No. of Trees—	
	1900.	1890.
Citrons.....	4,780	1,757
Figs.....	188,941	109,535
Guavas.....	7,056	11,495
Kaki.....	2,690	19,101
Lemons.....	1,493,113	82,611
Limes.....	311	2,007
Oranges.....	5,648,714	1,153,881
Pineapples.....	1,815	145,000
Pomelos.....	80,918	144
Olives.....	1,530,164	278,380
Miscellaneous.....	37,957	25,250

<sup>1</sup>Number of plants. <sup>2</sup>Banana trees.

	—Quantities—	
	1899.	1889.
Citrons, boxes.....	90	.....
Figs, pounds.....	10,620,366	11,190,816
Guavas, pounds.....	31,370	.....
Kaki, pounds.....	59,400	.....
Lemons, boxes.....	874,305	305,598
Limes, boxes.....	125	.....
Oranges, boxes.....	5,882,193	1,245,047
Pineapples, number.....	440	.....
Pomelos, boxes.....	17,851	.....
Olives, pounds.....	5,040,227	9,659,208
Miscellaneous, pounds.....	317,330	.....

The orange groves were reported chiefly by southern counties—San Bernardino, Los Angeles, Riverside and Orange counties containing more than four-fifths of the trees. In 1900 the number reported was nearly five times as great as it was in 1890.

All counties reporting oranges shared in the increase, except Lake and Santa Barbara. The production showed a still greater gain.

Olives are grown chiefly in the extreme southern counties—Los Angeles, San Diego, Ventura, Riverside and San Bernardino furnishing the greater part of the crop of 1900. The number of olive trees reported in 1900 was nearly six times that reported in 1890. Excluding Los Angeles, the counties named showed a hundredfold increase.

San Diego and Los Angeles counties report over one-half of the lemon trees of the State, and show marked increases since 1890, the number reported in 1900 being over eighteen times as great as ten years before.

The fig-growing industry centers in Fresno county. Pomeloes, or grape fruit, which in 1890 were reported in but four counties, are now grown in over one-half of the counties of the State. Pineapples are found chiefly in San Diego and Riverside counties and citrons are confined almost exclusively to Los Angeles county. The remaining fruits are of small and decreasing importance.

**SMALL FRUITS.**—The total area used in the cultivation of small fruits in 1899 was 6353 acres, distributed among 5137 farms. The value of the fruits grown was \$911,411—an average of \$177.42 per farm. Of the total area 2418 acres, or 38.1%, were devoted to strawberries. The total production for the State was 7,690,830 quarts, of which more than one-third was reported by Santa Cruz county. Next in importance are blackberries, of which 1960 acres were reported. Sonoma county reported one-fourth of the total production of 4,159,131 quarts.

The acreage and production of other berries were as follows: Raspberries and Logan berries, 1039 acres and 1,446,190 quarts; currants, 729 acres and 1,031,100 quarts; gooseberries, 135 acres and 195,670 quarts; other small fruits, 72 acres and 59,030 quarts.

**GRAPES.**—Grapes were grown in 1899 by 13,064 farmers, who obtained 7,214,334 cents of fruit from 90,686,458 vines. The total value of the grapes, including the value of raisins and of 5,492,216 gallons of wine made on farms, was \$5,622,825. Of the quantity of grapes reported, raisin grapes contributed 3,403,368 cents; wine grapes, 3,191,727 cents; and grapes for table use, 619,239 cents.

Of the fifty-seven counties in California, all but five reported grape vines, and nearly one-fourth of the counties had over a million vines each.

Fresno, Sonoma and Santa Clara are the leading counties in the cultivation of this fruit, reporting, in 1900, more than one-third of the vines of the State. Fresno county alone produced 2,125,388 cents of raisin grapes, 522,529 cents of wine grapes, and 94,418 cents of grapes for table use.

Of the counties reporting large acreages in vines, the greatest number of varieties of wine grapes were grown in Sonoma, Santa Clara, Napa, Sacramento, Los Angeles and Alameda, while grapes for table use and raisins were reported principally by the adjoining counties of Fresno, Kings, Tulare and Madera.

**Hops.**—The cultivation of hops in California is rapidly becoming an important industry, the quantities reported for each census year since 1860 being as follows: 1860, 80 pounds; 1870, 625,064 pounds; 1880, 1,444,077 pounds; and in 1890, 6,547,338 pounds. In 1900, 203 farmers reported an area of 6891 acres, or an average of 33.9 acres per farm. They obtained and sold from this land in 1899, 10,124,660 pounds of hops, an average of 1469 pounds per acre, and received therefrom \$925,319, or an average of \$4558 per farm, \$134 per acre, and \$0.09 per pound.

The counties producing hops are mostly inland and extend from the extreme north over two-thirds the length of the State, Sonoma, Mendocino and Sacramento counties reporting 62.0% of the total acreage.

**VEGETABLES.**—The value of all vegetables produced in the State in 1899, including the value of potatoes, sweet potatoes, onions and sugar beets, was \$7,182,318. Of this amount, 36.7% represents the value of potatoes, a crop reported by 9760 farmers, who obtained an average yield of 125 bushels per acre.

Aside from the land devoted to potatoes, sweet potatoes, onions and sugar beets, 30,194 acres were used in the growing of miscellaneous vegetables. Of this area, the products of 9908 acres were not reported in detail. Of the remaining 20,286 acres, concerning which detailed reports were received, 4292 acres were devoted to tomatoes, 2368 to asparagus, 2123 to sweet corn, 2024 to watermelons, 1949 to cabbages, 1654 to celery, 1231 to green peas, 1209 to pumpkins and 3436 to other vegetables.

**SUGAR BEETS.**—Sugar beets were reported in California in 1880, but it was not until within the last decade that their production became an important branch of agriculture in the State. In 1899, 863 farmers devoted to this crop an area of 41,242 acres, an average of 47.8 acres per farm. They obtained and sold from this land 356,535 tons of beets, an average yield of 8.6 tons per acre, and received therefrom \$1,550,346, an average of \$1796 per farm, \$38 per acre and \$4.35 per ton.

These beets were grown in seventeen counties in the central and southern coast regions, the counties of Ventura, Monterey, Santa Clara and Alameda,

ranking in the order named, reported 70.6% of the total acreage.

**FLORICULTURE.**—Flowers and plants were grown for market in 1899 by 280 farmers, of whom 208 derived their principal income from the sale of floral products. These commercial florists had invested a capital of \$1,280,281, of which \$766,310 represents the value of land, \$467,625 that of buildings and other improvements, \$36,881 that of implements and \$9465 that of live stock. They expended \$110,705 for labor and \$7379 for fertilizers. The value of the flowers and plants grown by the commercial florists was \$511,125 and that of those grown by others \$69,521.

**LAND UNDER GLASS.**—Owing to the natural advantages of the climate of California, the amount of glass used is not so large, in proportion to the value of the products raised, as in most other States. In 1900, 429 farms reported land under glass, with an aggregate area of 1,572,480 square feet. Of the 208 florists in the State, only 150 use glass, and they have 1,636,721 square feet of glass surface, equivalent to 1,227,541 square feet of land under glass.

**NURSERIES.**—Trees and shrubs valued at \$558,329 were grown in 1899 by 245 farmers, of whom 141 derived their principal income from the sale of nursery stock. The farms of these commercial nurserymen were worth \$1,725,945, of which \$1,515,630 represents the value of land, \$10,315 that of buildings and \$55,243 that of implements, machinery and live stock. The expenditure for labor was \$158,345 and for fertilizers \$8607.

**LABOR AND FERTILIZERS.**—The total expenditure for labor on farms in 1899, including the value of board furnished, was \$25,845,120, an average of \$356 per farm. The average was highest on the most intensively cultivated farms, being \$1123 for nurseries, \$1053 for sugar farms, \$532 for florists' establishments, \$434 for hay and grain farms, \$428 for fruit farms, \$353 for vegetable farms, \$259 for dairy farms, and \$255 for live stock farms. Managers expended, on an average, \$1732; share tenants, \$418; cash tenants, \$361, and owners, \$214. White farmers expended \$354 per farm and colored farmers \$463.

## THE FIELD.

## What Can be Done With Johnson Grass?

## NUMBER I.

This is a standing question in the irrigated districts of the San Joaquin valley where the plant has widely invaded lands which are wanted for orchard or vineyard or for more profitable field crops. There will be a unanimous vote under such circumstances that the thing to do with Johnson grass is get rid of it, but how to do this is a great question. Nor is it confined to California. It commands attention all through the Southern States and has just received treatment in the form of a special pamphlet by the Bureau of Plant Industry of the U. S. Department of Agriculture, giving the results of a wide investigation made last year by C. R. Ball, covering the whole country. From this source we compile the following:

**INTRODUCTION.**—In the sixty years since it was introduced into Alabama, Johnson grass has continued its westward course until it is now found abundantly as far west as Texas, and in the river valleys and along irrigating ditches of New Mexico, Arizona, and California, extending along the coast region to Oregon and Washington. As a luxuriant and profitable growth, Johnson grass is confined in the southern States to the fertile alluvial soils of the river bottoms and the black prairie region. It is also found in the poorer sandy or clayey soils of the hills and the pine barrens, but in such regions its growth is less vigorous. Above the latitude of 37°, or about that of Tennessee, it is much less frequent, because it is subject to winter killing during the more severe winters, although it may persist for several years as far north as latitude 42°, or that of central Iowa and New York. In the drier regions of the Southwest it is found in the greatest abundance along the irrigating ditches, while on the Pacific coast it establishes itself very rapidly in the warm, moist, valley lands or in the drier parts along the canals of the irrigation systems.

**DISSEMINATION.**—When we stop to consider that in sixty years from the time Johnson grass was first cultivated in this country it has spread from the original point of introduction over more than half the United States, we realize that it must either have had especial assistance in order to cover so large a territory or is a plant remarkably well adapted to the conditions obtaining throughout this great area. As a matter of fact, both of these points are true. As the seed was introduced into Alabama for the purpose of cultivation, so it has been carried or sent from Alabama westward to a large number of Southern States. Persons recognizing its great value as a hay and pasture grass have been anxious to secure seed, and wherever they have established their meadows, there they have established a new center of infection for surrounding districts. It is quite probable that the introduction of this grass into



most of the States which it now occupies to a greater or less extent was accomplished in just this manner by persons eager to grow this new and highly praised grass. In most of the Southern States it is probable that at one time or another seeds were planted in many places widely separated from each other. On the other hand, it seems almost certain that from the comparatively few centers of infection, which were thus purposely established, the seed had been unintentionally and constantly scattered until in most of the Gulf States this grass may be found on almost every plantation.

The principal and, in fact, almost the only means by which the plant is propagated is by the seed. This is produced in abundance, and is so well protected by the hard and firm coverings that it is enabled to withstand adverse climatic influences. One of the principal ways in which Johnson grass has been distributed so thoroughly is by means of the hay. It has been the custom of planters throughout almost the entire range of this grass to allow the seed to become ripe on the stem before cutting. The seed shatters very readily when ripe, and as the hay was hauled about the plantation to the points where it was to be fed or baled, and the baled hay carted about or carried on wagons to some shipping point, the ripe seed was scattered and an abundant stand of plants the next season was the inevitable result.

Cattle, horses, and other farm stock running at large have been very instrumental in scattering Johnson grass over the plantations. Wherever cattle are grazing on this grass after the seeds are formed large numbers of seeds are eaten. By reason of their hard outer covering the ripe seeds pass unharmed through the digestive tract of the animals and pass out of the body ready to produce a vigorous growth. Wherever the droppings from such animals are found there is always danger of a growth of Johnson grass. In the same manner the manure from stock fed in the stables or yards will be filled with live seeds, and wherever this manure is scattered as a fertilizer in the fields the result is sure to be a crop of the grass.

The wind and several species of seed-eating birds also aid in scattering the seeds of this pest over the country, but the actual damage arising from this source is undoubtedly small. Floods also assist in the rapid and thorough dissemination of the seeds. As before remarked, Johnson grass is found most abundantly in the rich soil of river valleys. Every time these streams overflow their banks as a result of heavy rains, large quantities of seeds are carried downstream by the high water and scattered broadcast over plantations lying below.

One of the most common ways in which the seeds are scattered is through the medium of seed oats. It has been found quite difficult to separate the seed of Johnson grass from the oat seed, and as wherever oats are sown on land infected with Johnson grass ripe seeds of the latter are almost always harvested in the resulting oat crop, it will be seen how great the danger from this source really is. In this way the grass is carried not only from one plantation to another in the same neighborhood, but as the grain either for feed or seed is widely distributed the pest has been carried from one State or section to another. This has been especially true in the last few years.

The varieties of oats ordinarily raised in the South have been seriously injured year after year by rust. Recently strong efforts have been made to secure a variety which should be practically rust proof. Such a variety has been grown in the State of Texas and has been widely sold throughout the entire Gulf region under the name of Texas rust-proof oats. These oats were largely raised on land where Johnson grass was flourishing, and a large proportion of the grain contained the seed of Johnson grass. Wherever these oats have been sold Johnson grass has been introduced, and many plantations which had been kept scrupulously free from it for many years have been unwittingly seeded to this dreaded pest in this way. It has also been widely scattered along the rights of way of railroads. This has come to pass through the shipments of the baled hay from which the ripe seed has scattered along the track through the motion of the cars, and through the medium of stock cars in which this grass has been used for feed or for bedding the animals.

**Roots.**—Johnson grass is also disseminated by means of the underground stems or rhizomes. Wherever a plant is started from seed these strong creeping rhizomes are thrust out and the patch grows slowly but steadily larger each succeeding year. Whenever a plow or other cultivating instrument passes through one of these patches fragments of the stems are frequently dragged for some distance and there establish a new growth of the plant. Occasionally pieces of the stems become wedged in the hoofs of cattle crossing plowed fields and are carried for some distance before coming free again, and where they lodge a new center of infection is established.

**CONTROL.**—In the consideration which has just been given to the methods by which Johnson grass spreads so rapidly it was found that the ripe seed was the important factor in dissemination. The question of controlling the pest, then, resolves itself directly into the question of controlling the seed production of the grass. In short, the spreading of the grass would be almost completely checked if it were not allowed to produce seed. This may

look like a very serious problem, and yet there is little doubt that nine-tenths or more of the Johnson grass which is allowed to mature seed is in cultivated fields or in other places where it is easily accessible and where seed production could be prevented. At the same time it should be remembered that it is in these most accessible fields and patches of the grass that ripened seed does the greatest damage. Except on the comparatively few large plantations where Johnson grass is grown as a hay crop and where its cultivation has been carried on successfully for many years, the utmost carelessness prevails in allowing the plants to mature seed. In a great many meadows which are devoted entirely to this crop thorough cultivation or plowing of the ground is given only at such long intervals that the grass becomes much weakened. When this is the case the resulting crop is very irregular and uneven in its growth. Some plants will put forth flowers and ripen seed before others show any signs of doing so. The farmer who wishes to get the largest hay crop for his labor delays his mowing until the first seeds have ripened and fallen or are ripe enough to scatter from the hay after it is cut. This method of harvesting the crop should be avoided. The meadow should be so handled that the crop will be developed almost uniformly, as is the case with a crop of wheat or oats, and the cutting could then be so timed as to prevent the ripening of seeds on even the earliest of the plants. It has been noted, especially in the States of Louisiana and Texas, that even where a good, vigorous growth of Johnson grass was to be made into hay the whole field was allowed to ripen its seed before the cutting took place. This policy is not to be approved, because of the dangers arising from the great quantities of seed thus produced and because the hay is practically worthless for feed when cut at that period of its growth. This point, however, is discussed at greater length in another place.

Johnson grass growing along turn rows, fences, and roadsides should be mowed frequently to prevent the ripening of the seeds. In a great many instances, such as farms entirely inclosed by wire fences, a bunch of cattle can be used and the grass thus kept grazed during the growing season. One State (Texas) has a law which deals with the seeding of Johnson grass on the rights of way of railroads. Such areas should be carefully looked after, and the production of seeds should not be allowed in any of the States where the grass is troublesome. There are, scattered about on pieces of land not in cultivation, small quantities of Johnson grass, and these are likely to ripen their seed unmolested unless they are grazed by cattle. The dangers arising from the scattering of seed from these struggling plants are, however, very small compared with those threatened by the wholesale production of seed permitted in cultivated fields and meadows. It is to be understood that this prevention of seeding is not recommended as a means for killing the grass, but simply to check its rapid spread to land heretofore unoccupied by it. No method of extermination is likely to prove successful so long as the area of infested ground is allowed to increase so rapidly from year to year. During the course of this investigation a large number of representative and intelligent planters in the different States visited were asked if, in their opinion, it was not true that nine-tenths of the spread of Johnson grass into places where it is not wanted was due to carelessness in allowing seed to ripen freely. In every case the answer was in the affirmative. The State of Texas alone among the States troubled by Johnson grass has enacted laws dealing with the question. The provisions of these laws are excellent, in spirit at least, but as with most other preventive and remedial legislation, their successful enforcement depends largely upon a strong public sentiment of approval. Until this sentiment is thoroughly aroused such laws are apt to be dead letters. This fact becomes strongly evident when one takes into consideration the large number of planters who cry out against this nuisance and yet are engaged in the raising of oats badly infected with Johnson grass. The mixed seeds of the two are largely sold in other States as pure seed oats in spite of legislation to the contrary.

(TO BE CONTINUED.)

## THE POULTRY YARD.

### Pea Fowls.

TO THE EDITOR:—Will you kindly inform me through your paper how long it requires for pea fowls' eggs to hatch; what is best to feed the young, etc.? Any information will be appreciated.—B., Alamo.

One who has had considerable experience in raising pea fowls says that four weeks are required to incubate the eggs. These birds have a more carnivorous appetite than many other fowls and appreciate fresh meat, or meat in any shape. An excellent way is to hang a piece of meat in the runs until it becomes quite old. The birds will eat the maggots and thrive upon them.

Their habits are in many ways much like those of the common turkey. The mother hen will take her

brood in the fields foraging, where they will pick up much of their living.

A. W. ROBINSON.

Napa.

### Housing, Care and Feeding.

From a lecture before the Oakland Poultry Association by  
W. S. CHILDS of Fruitvale.

Housing, care and feeding is an extensive subject and when I was asked to tell about my new poultry house I did not expect such a head for it. That takes about everything in the fanciers' line except the selling, and that is the hardest part of all. It is one thing to raise thoroughbreds, but quite a different story to raise customers. The poultry papers may scare them up for us, but it can't teach us business.

Ever since I tried raising poultry I have been looking at poultry houses from the chilly Berkeley hills through to the Fruitvale jungles, to warm San Leandro. Some were on stilts open below, some with scratching pens below, some with roofs on hinges to open to the sun all day, others with the whole front open to the weather for plenty of "fresh air," large and small, to hold from 10 to 100 fowls. Everybody thought they had it fixed fine and I am like the rest, I think my seventh and last attempt at hen architecture is just the thing, or will be when completed.

**A FANCIER'S HOUSE.**—This is for the fancier and not for the market poultryman. It is not a large house, but it can be easily extended. It is 50 feet long and 20 feet wide, an aisle through the center with a door at each end. The pens are on both sides of the aisle with an opening for the birds into 25-foot yards out doors. All the doors are operated from the aisle. For convenience in feeding it is certainly all right for the lady fanciers, for they can feed and water without soiling their feet; no matter what the weather they may wear slippers and pretty dresses when looking after their pets, for the aisle is clean and clear. Water troughs run both sides the length of the aisle and a tap over each kept dripping keeps clean fresh water always at hand. The troughs are easily swept clean with a broom. The feed is given in deep troughs or boxes, also in the aisle, over the water troughs. The partition in front of the boxes is slatted, so that the birds can reach the food or water without soiling or wasting it. The nest boxes open in the aisle to gather eggs. By having all these in the aisle we get a clear space 8 by 12 which is filled deep with straw for a scratching pen, and where the hens can have their dust bath and are dry and happy in the most severe weather. There is a window in each pen. The partitions are fine mesh netting and a dividing board at the bottom, to prevent fighting. The roosts are suspended by wire, which does away with the chances of vermin crawling about. Under the roosts is a dropping board which keeps the scratching pen clean. These dropping boards are arranged on sloping sides to draw into the aisle over a wheelbarrow and are quickly "hoed" clean. The doors are extra large and wide and are made to slide, avoiding blocking the aisle. Of course the roosts are kept painted. We use a mixture of oil of tar, kerosene and melted grease. We also use the handy tin sprayer.

For ventilation the roof is arranged in a novel way. The sides, instead of meeting at the ridge pole, have one side, the one towards the wind, extend beyond the center and overlap the other side which does not reach as far as the center, thereby leaving an opening for a row of windows the length of the roof, which are on hinges. In a large house, where the partitions are all netting, there is plenty of air and no small draughts to stream cold air on unlucky heads, and it cannot get hot and cold like the little sweat boxes that we see so often. They are like opening an oven door when you let the birds out in the morning, and the great change of temperature is conducive to colds, etc.

**ADVANTAGES.**—The requirements of an up-to-date poultry house are facility of cleaning and feeding, dryness, rat-proof and ventilation; for the rats the earth is the best, unless you can afford a cement floor, as it furnishes no hiding place and a hole is quickly seen, and a little poison after the birds are locked up at night will generally finish the pest. Now I think I have described the house that fills these requirements. The plan is an easy one to extend by simply adding another pair of pens by building out either end. It is a great time-saver compared with the colony plan, where one has to visit each little sweat box in the rain, like the hennery on the high hillside in upper Fruitvale that suggests a cemetery. We feed Sampsons, or the dry feed method, and as our birds cannot get their feet in the troughs there is no waste and fine cut green feed is eaten up clean. In the afternoon we throw grain into the straw and there soon is a dust storm from every pen. Speaking of ventilation some fanciers think they cannot get too much. I saw a large house up in the hills that was made entirely of laths except the roof. It must be attractive to the coyotes, as the chickens can be plainly seen like birds in a cage. Mr. Van Every, who has a large place and many houses at his Eden Vale farm, is building all his new houses with the lower half slatted and the roosts up



in the closed upper half, giving the wind a clean sweep under the birds. He goes still farther when the rainy season has passed and puts the roosts up in the yard with the stars and the night dew for a covering. Mr. Van Every claims healthier birds from this treatment. From my experience I know that the cockerels I have kept in open pens with only a little shake shelter from the rain never had a cold and were out all winter. There is a ranch over the hills on the Fish Ranch road that goes Van Every one better and leaves out the roosts as well as the roof, and roosts their rocks in the old plum trees.

I notice an article in the last issue of an Eastern poultry journal describing nearly the same house, but as mine was built some months ago I claim priority. The Eastern house, however, has an additional feature in a row of conditioning coops overhead.

## METEOROLOGICAL.

### Weather Discussions.

Written for the PACIFIC RURAL PRESS by L. E. BLOCHMAN.

The supposed Japan current's movement is a figment. The variability of rainfall from the central part of the State southward is due to another cause.

During the long dry spell of December and part of last January, some of our weather-wise were again theorizing about that chameleon-hued Japan current. According to one tale bearer, that a well-known paper gave credence to, the Japan current had for eons past preserved its equanimity, but in the year one of the twentieth century it had met an obstruction in its course which deflected it north of its usual path, and hence the shortage of rains south. Possibly, too, its shortcomings had begun even four years before.

But what are the true facts of the case? Long before reaching this coast the Japan current is lost in mid-ocean. It can not, like the Gulf stream, be traced along farther. There is, however, a general eastward movement of the atmosphere, which carries water and air currents in an easterly direction. There is also a storm or rain bearing area that crosses this broad Pacific ocean, originating from the tropical monsoons of the Indian ocean; and taking a course in the atmosphere along the Japan current's waters it is confused with that current, after the current has lost its identity.

This rain-bearing area, characterized by a relatively lower barometer, strikes in on our coast somewhere between Vancouver and northern California. In summer, however, it moves relatively about 1000 miles farther north.

Now we aim to demonstrate that this storm-bearing area, or low barometer area, which we may substitute as the real equivalent of the Japan current, does not in winter vacillate in its movements sufficiently to account for the great differences between the rainfalls of some seasons in the southern part of the State as compared with those of the northern part.

In the first place, the center of the storm area seems to strike in very near the same places each winter. This very month of February, the forepart of the month was very dry south, followed by wet conditions after the 21st inst., and yet the storm-bearing areas first struck the coast between comparatively the same points, from Vancouver to Cape Mendocino. Nor was there any higher barometer over the Montana Rockies in the latter part of the month which might have prevented the usual directly easterly trend of these storms than in the forepart of the month. If anything, there was less than the average high barometer condition over the Rockies in the latter half.

Then why did the rains trend southerly? The answer to this question which we may anticipate solves the problem. It is due to the absence of that high barometer area that crosses the State from a point above Point Conception to about northern Utah.

It may be well to state that south of the rain-bearing area of our coast there exists a dry belt characterized by high barometers. This is even a broader belt than the storm area northward. The center of this high barometer area can be noticed as striking across from the Hawaiian Islands to the south central California coast, continuing eastward through the plateau region of Utah or southern Idaho to the Rockies. In summer, however, this same continental high, as it is called, strikes the coast higher up, when rains cease in northern California and Oregon.

It is to the greater persistency of this high barometer area that long dry spells exist in winter; and, contrariwise, it is to the lessening of its intensity that rain-bearing areas of the north can deflect southerly.

To illustrate this fact: Up to the 20th of February a persistent high barometer area crossed over the coast to Utah. On that date the barometer at the Salt Lake end dropped .30 of an inch—a very appreciable decline. Within forty-eight hours the storm that had been hovering on the Oregon coast deflected itself southward and heavy rains fell as far south as San Bernardino. In the first twenty days of the month not  $\frac{1}{4}$  inch of rain had fallen in Los Angeles, while over 3 inches fell in San Francisco. But in the one storm of the 21st and 22nd 1.60 inch

fell in Los Angeles, and it then rained off and on the rest of the month.

Does not the Weather Bureau observe these facts? Yes indeed they do! Mr. McAdie is now ascertaining the averages of the monthly barometers along the line of this "continental high," to find the normal and then to note periods of excess and the opposite. My attention was first called to this "continental high" in the dry December of 1897 and particularly through the prevalence of northerly winds in all localities south of the apex of this high barometer track. Absolute droughts have northers in excess; long dry spells of other seasons have them far less. Hence there is the inferential possibility of distinguishing between a dry spell and a dry year. Instead of assuming that the rain bearing area in the driest years kept to a more northerly course, it is far more in evidence that the dry belt, the "high," was broader (and the apex manifested a more excessively high barometer). In consequence the rains did not reach down the coast as far as usual.

Such contrasting seasons as 1893-94 which gave Los Angeles but  $6\frac{1}{2}$  inches rain to San Francisco's 18 $\frac{1}{2}$  inches, in comparison with Los Angeles' record of 1890-91 of 13 $\frac{1}{2}$  inches to San Francisco's 17 $\frac{1}{2}$  inches—the former season having only 35% of the rainfall of San Francisco and the latter nearly 80%, can only be accounted for in the relative intensities of this continental high barometer area. In the wet season of 1883-84, Los Angeles had even 5 inches more rainfall than San Francisco.

In some seasons the high seems moved aside for a short period only, during the prevalence of a northern storm, which, being buffeted in its easterly course by a high barometer over the Montana Rockies, is obliged to seek a southerly track, and thus gives the occasional heavy precipitation southward. At other times, like the present end of February, this continental high has, so to say, lost its individuality and rains south are very much more frequent.

Owing to the absence of the high barometer area in its usual path, the low spreads itself out more flatwise adown the coast, giving the effect of an apparent lower movement of the rain current. We know as yet but little of the causes for the variability of these great atmospheric currents. They come across our coast from the broad Pacific; a counterpart to them strikes the Peruvian rainless coast of South America, with apparently the same effect. They originate from the monsoon conditions of the Indian ocean. India has them to count with, and feels the effect of the highs in her semi-arid belt. Some astronomers find a relation between the varying sun's spots and the intensity and consequently the droughty influence of these high barometer areas. India's occultists assign planetary conditions as influencing them. At any rate, we as scientists, as well as others, find ourselves at the limitations of our knowledge all too soon in trying to account for the initiative of these prodigious atmospheric currents.

In conclusion there is this to remark: The "highs" may vary in persistency and extent; they may for several years in succession, as in the past, cause a rain deficiency in the central and southern part of the State; but eventually they must react, they must seek their level, as everything else in nature. There will be a return to seasons of lower highs, and therefore to years of greater rainfall, that will average up past deficiencies. People will then duly accredit the Japan current for its propinquity to our southerly shore, after having cast it off as lost in higher latitudes.

The whole Pacific coast—so, also, the Indian ocean coast—has periodic rainfalls. There are always greater extremes in the periodic rain belt than in the other type, and the greatest variability is found in the arid and semi-arid belts; but in the long run one extreme is counterbalanced by the other. Australia is in this same periodic rain belt governed by the Indian ocean. For seven years there has been a period of rain depression, causing more or less serious droughts in the lighter rain localities. The droughts of India have likewise been accumulative in this period. There must be a turning point soon to seasons of greater precipitation. The present period of depression is not, however, phenomenal. In the '50s there was a long period of rainfall below the normal. Beginning with the great drought of 1850-51, when less than 5 inches rain fell in the interior as far north as Sacramento, until the great flood year of 1861-62, only one wet season occurred—1852-53.

Then followed two years of normal rainfall about San Francisco, with six years in succession of below normal rainfall. In some of these seasons, as in 1856-57, though along the bay coast the rainfall was only a little below normal (20 inches), in the interior and south the depression was decidedly more marked. The record for Sacramento in 1856-57 is 10 $\frac{1}{2}$  inches—exactly the same as in the last drouth of 1897-98. In San Diego it tapered off to  $4\frac{1}{2}$  inches—less by one-fourth inch than even this last drouth. Los Angeles and Santa Barbara have no records for those early years. This shows the intensity of the rain depression in the 50s very close to ours since 1894.

From 1878 to 1890 was, on the other hand, a period of high average rainfall, even up to and including 1893. Had we records before 1849, we undoubtedly could trace further periodicities of light and heavy rainfall, and we could realize that there is nothing phenomenal in a recurrence at forty years interval

of the present light rain period. There is, however, a turning point, and in some of these near-by seasons, as heretofore, a flood year may be expected.

It is utterly futile to connect the Japan current's assumed variable intensity or movements with any seasonal rainfall. For instance, in December, 1882, occurred the most serious flood of Portland, Oregon's, record—about 20 inches of rain falling and very much more on the coast. At Sacramento the rainfall tapered off to about 1 inch, decreasing southward. I well recollect that at this point incessant heavy northers occurred during that month, caused by a very persistent continental high (barometer) crossing above Point Conception to the plateau interior. This prevented the rain-bearing area from at all trending southward and intensified the precipitation northward in Oregon.

In the great drouth of 1850-51 San Diego had 8 $\frac{1}{2}$  inches of rain—nearly double that of Sacramento—apparently the most phenomenal weather condition noted. But this is readily accountable as coming from Sonora rains. In this instance, as in some other serious droughts, the high barometer area may strike in farther north of its usual course; and in this season it was so far up the coast, (note the phenomenal drouth as far north as Sacramento), that the next belt, the upper tropical rain belt that strikes in at the middle Mexican coast, afforded by its deflection rain above its normal latitude.

The movement of this great continental high barometer area, called the anti-cyclonic, prevents our having summer rains and accounts for the changes and variabilities of seasons. It is the all-predominating belt of ocean atmosphere that crosses the Pacific, bounded to the north and south by lesser belts—the rain areas. The study of this "high" belt is the greater problem in Pacific coast climatology—the rain-bearing area is the complementary factor.

Santa Maria, June 8, 1902.

### The Demand for Harvest Labor.

The advice of the PACIFIC RURAL PRESS that all localities needing harvest help should hold meetings and proclaim that need as loudly as possible is being followed in many districts. Let it go on: there is much labor in the State which can be attracted and made available.

AT SAN JOSE.—Last Saturday's session of the San Jose Farmers' Club was devoted to a discussion of the labor problem. W. P. Cragin, Judge Lewis, F. M. Righter, A. R. Woodhams and F. H. Babb took part in the proceedings, reviewed existing conditions and suggested ways and means to accomplish the desired results. In its report the Herald says that a resolution was adopted directing the executive committee to interview the railroad authorities and ask that laborers be given the same low commutation rate as granted students to the schools and universities. The committee was also directed to interview the school authorities, both city and county, and ask that school opening this season be made about two weeks later than usual. The Herald says: Thousands of laborers will be needed in the valley this season to assist in harvesting the fruit crop. The fruit trees throughout the surrounding country are laden to their fullest capacity, the wages paid this season will be higher than ever before, but unless some remedy is found for existing conditions the orchardists will experience great difficulty in securing help to harvest the crop.

IN PLACER COUNTY.—A meeting was held at Penryn also on last Saturday, which the Auburn Republican-Argus says was largely attended. After a general discussion it was elicited that the sense of the meeting was as follows:

1. That available labor, particularly reliable white labor, is locally very scarce even thus early in the season;
2. That Japanese laborers already are demanding higher wages than ever before paid;
3. That united action is necessary in all fruit districts of the county;
4. That an organization of growers requiring labor be formed;
5. That co-operation among all the growers in Newcastle, Loomis and Penryn is absolutely necessary, and that an organization embracing these three districts be formed;
6. That such an organization could import labor, if necessary, to supply the pressing demands, and otherwise be of great use to the growers;
7. That Newcastle and Loomis growers be asked to take action at once and co-operate with us;
8. That this be given the widest publicity.

A committee of three, consisting of A. Benham, D. Kays and C. L. Logan was appointed and instructed to communicate with prominent growers of Newcastle and Loomis the action taken at this meeting and to request their valued co-operation, and to request them further to endeavor to call a meeting of growers interested in the labor proposition at their respective towns, for the purpose of taking definite action towards forming an organization embracing the three districts.

The committee was also instructed to request that a report be sent of any action taken and to ask for any suggestions they may be willing to offer, and further, that arrangements be made for a general meeting of the three districts as early as possible.



## Agricultural Review.

### ALAMEDA.

**BIG YIELD OF BERRIES.**—Niles Herald, June 6: James Huggill shipped the first picking of his Logan berries Monday. They sold for \$15 per chest. Yesterday he shipped again and next week he will begin daily shipments. The vines promise to yield 100 chests per acre this year. They were set out beginning March 18, 1901. He has nearly eight acres and next year will have fifteen.

**SALE OF ROYAL ANNES.**—William Barry has sold his Royal Annes for 5½¢ aboard cars at Niles to the Long Syrup Co. of San Francisco, who claim that there are no cherries in the State equal to those from this district for maraschino.

**FRUIT GROWERS DISSATISFIED WITH CANNERS' PRICES.**—An Oakland telegram states that Alameda county fruit growers are expressing disappointment over the conditions of the fruit market. The prices offered by the canneries for cherries are generally 3 cents a pound for soft white and black cherries and 6 cents for Royal Annes. In some cases only 2½ cents a pound is being paid for the cheaper varieties. The growers regard these prices as quite inadequate, because in recent years better prices were obtained when the crops were larger. Apricot growers are considerably disturbed, as it is given out that the canneries intend to pack very little, if any, in excess of what is covered with five-year contracts.

### AMADOR.

**HEAVY HAIL STORM.**—Jackson Ledger: The storm of May 25th was the heaviest ever known in Amador county. The storm lasted two hours and the lightning and thunder were something terrible. Young chickens and goslings were battered to death by hail. Hailstones 1½ inches in diameter fell at Defender.

### BUTTE.

**BIG YIELD.**—Oroville Register: D. H. Hilton had two and a half acres of wheat hay that turned off ten tons. N. B. Crane cut the crop and while he was running the machine he was completely hidden by the tall stalks of grass.

**PUMPING WATER FOR IRRIGATION.**—Mercury: J. B. Rhie, superintendent of the large olive orchard of Drumm & Chambers of Palermo, state that a pumping plant is being installed to pump water for irrigation. A portion of the orchard is situated too high to be irrigated from the water system, and water will be pumped from the sloughs east of the pipes. A large pump and 2700 feet of pipe are being put in. Thirty acres were planted to olives this spring, making more than 100 acres now planted.

**MORE PUMPING PLANTS.**—Biggs Argus: Besides the steam power pumping plant of large capacity used on the Reed orchard last year, an electric motor pumping plant has just been added with a capacity of 2500 gallons per minute. The two plants are now running day and night and supplying water sufficient to irrigate ten acres of orchard per day. The water from the well is carried over the entire orchard by a system of flumes.

### COLUSA.

**A HORSE FLY IN HIS EAR.**—Williams Farmer, May 31: As T. D. Ryan was nearing the top of the Leesville grade Monday morning with one of the Cooks Springs Mineral Water freight teams a horse fly landed in his right ear and kept up such a buzzing that it nearly set Tom crazy. He was found by Wm. Quigley, who drove up with the Bartlett Springs stage, and who succeeded in killing the bug by pouring water and tobacco juice in the ear. Mr. Ryan returned to town and Tuesday morning Dr. Kimball succeeded in getting the fly out of his ear. It was an experience Tom does not care to meet with again.

### GLENN.

**THE BANE ALMOND ORCHARD.**—Orland Register: The Bane almond orchard consists of forty acres of trees which are loaded to the ground with nuts, some trees requiring props to prevent breaking. This is a young orchard, but is nicely cared for and in a thriving condition. No irrigation is used. It is constantly cultivated early in the season and again when the crop has been removed. There is no better orchard of almonds of its age in California and the quality of nuts produced is top notch. It ought to net its owner \$4000 to \$5000 this year. Mr. Bane cares for this orchard alone with the exception of harvesting, when some twenty-five people will be required to pick, hull, bleach and pack.

**PLANTING OF 1902.**—It is a hard question to answer, this question of how many

trees have been planted in this locality this year. R. J. Trumbull heads the list. He has planted about sixty-seven acres, some twenty-seven to oranges, the remainder to mixed fruits. The Orland Citrus Association has planted twenty acres to oranges. J. B. Morrissey has planted nearly eight acres. E. J. Eyler planted five acres to oranges. Nearly every one in this locality has planted from a dozen to a hundred, and all are looking fine and thriving. Many more will be planted next year.

### KERN.

**DECREASED GRAIN ACREAGE.**—Bakersfield Californian: Kern county will not produce the amount of grain this year that it does under ordinary circumstances, notwithstanding the fact that the rainfall for the season was above the average. This is accounted for by the lateness of the season. Up to the latter part of February, 1902, the lack of rain impressed the farmers with the idea that another '77 was to be experienced, and they would not risk seed and labor in planting a crop that there was every reason to believe would never sprout. When the rains did finally come the opportunity for sowing was virtually gone and very little ground was put in. The acreage, therefore, this year is comparatively small.

### KINGS.

**WINE INDUSTRY GROWING.**—Hanford Journal: Lemoore is rejoicing over the prospect of having a \$40,000 winery building in operation in time for this year's crop of grapes. There are parties now contracting with grape growers for their crops of grapes for the next three years for \$13 a ton, providing they can get 2000 tons signed. It is reported that a large proportion of the amount is already signed. A large grape grower of Kings county says that, figuring on the difference between the expenses of delivering the grapes to the market and preparing the raisins for the market, and the risk to be taken on the weather, \$13 a ton for green grapes is as good as \$75 a ton for raisins.

**ENTERPRISE NEAR LEMOORE.**—Hanford Sentinel: R. G. White is getting a pumping plant in readiness to put in operation on the Nunes ranch, north of Lemoore, for the Nunes Bros. The plant comprises a 3 H. P. crude oil engine and a Chinese pump, by which water will be raised from a slough on the Nunes ranch over a levy about 5 feet high. In this way water will be raised high enough to permit of easy irrigation. The Nunes water supply comes from the waste supply of Kings river and a number of its smaller tributaries, all of which dump their waste into the Nunes slough, keeping it well filled almost all the year around. The Nunes Bros. have a 160-acre ranch, which they expect to irrigate with water from the slough.

### ORANGE.

**BIG DROP IN CABBAGE.**—Fullerton News: The Cabbage Association sold this week's cutting to the Earl Co., getting \$7.50 per ton, a drop of \$5 per ton from last week. There is but little cabbage left. Three cars were sent forward this week and about that number will be sent out next week, which will practically clean up this season's crop.

### RIVERSIDE.

**INDIO CANTALOUPE.**—Redlands Facts, June 6: Albert Sarbaugh of Indio reports everybody prospering in that new agricultural region. Yesterday the first crate of cantaloupes was shipped by the melon association to Chicago. It is expected to get the first carload off by the 12th or 15th of the month. Last year the first crate was shipped June 10th and the first carload June 20th. The crop this year is a large one. There are about 600 acres planted to melons, under the control of the association and Ruddock, Trench & Co., the latter having about 150 acres. The total crop last year was 23 carloads. This year's crop is estimated at from 225 to 250 carloads. To harvest the crop will require about 600 pickers. Indians and Japanese will be used for the purpose. The Indians proved very efficient last year. They are paid \$1.50 a day. This year the melons will be packed in packing houses, for the first time. Last year all the packing was done in the field.

**GRAIN CROP DISAPPOINTING.**—Perris Progress: Last month Francisco Pico felt so sure of a big crop that he ordered 30,000 grain sacks. During a week of hot, dry weather in April the big crop prospects vanished. Senior Pico has had five mowers at work cutting hay. He estimates he will cut 200 acres of grain. Although the small crop is a disappointment to him, yet compared with other landowners he is lucky. Hundreds of mowers are at work in this vicinity and every day a big acreage is cut for hay. On many fields hay is cut and raked. In

other places mowers have apron attachments and reels.

### SAN DIEGO.

**PROFIT IN BARLEY.**—Imperial Press: Now that Edgar Bros. have harvested their barley crop a half mile from town, it is possible to make some calculations on the profit there is in the crop. One 40-acre piece in the 160 acres grown yielded ninety tons, while another forty acres went some better, though the exact amount is not yet known. It is believed that the yield of the 160 acres will exceed 320 tons.

### SAN JOAQUIN.

**RAMIE CULTURE SUCCESSFUL.**—Lodi Sentinel: Max Elwert who, with J. W. Austin, is engaged in the growing of hemp and ramie on a tract of tule land west of Lodi, exhibited this week a sample of the hemp. It is not yet ready for harvesting, but the plant shows a vigorous growth, and the fiber appears to be of excellent quality. Two, and sometimes three, crops can be cut per year.

**LATE FROSTS KILLED POTATOES.**—Late frosts have caused a 50% loss to new potatoes in several localities on Roberts Island. The loss will run into the thousands. On Staten Island the bean crop is almost a total failure. Where the potatoes have been knocked out on Roberts Island beans are now being planted between the rows, though in some places the potatoes are being plowed up and the ground reseeded to potatoes.

**GRASSHOPPERS DOING GREAT DAMAGE.**—Myriads of grasshoppers and locusts have made their appearance along the boundary of San Joaquin and Amador counties, and the orchardists and farmers are expecting them to destroy their crops and fruit, though they have not as yet caused much damage. There are swarms of them between Clements and Lone and also in the vicinity of Camanche.

### SANTA BARBARA.

**SANTA MARIA.**—TO THE EDITOR: This season will be a mixed one—some excellent crops and some poor ones in the same locality. Altogether, however, as regards this locality, northern Santa Barbara county, grain crops will be up to a full average; beans have a good start, but it is too soon to proffer any predictions; sugar beets are doing very well and promise the best yield yet in the record of the sugar factory here; feed, though dry, is strong and plentiful for all cattle and dairy interests. The problem for the sugar factory of expensive fuel (freighting coal 300 miles from San Francisco) is at an end. We have oil wells, within 10 miles of the factory, that supply it with an excellent grade of fuel oil at a very reasonable outlay.—L. E. B., Santa Maria.

**BIG POULTRY ENTERPRISE.**—Press: Edward Lynes is starting a big poultry enterprise on the A. M. Lynes place in Montecito. He has built a poultry house 100 feet in length, and will enlarge it. He will raise white Wyandottes exclusively.

**HAND PICKING BEANS.**—Ventura Free Press: Misses Dela Carnes, Julia Covarrubias, Sadie Larison and Anita Thompson left for Santa Barbara last Monday, to fulfill a large contract for hand-picking several thousand sacks of Lima beans for Dixie Thompson. These young ladies have been doing this work at the Ventura Wharf Company's warehouse for several months and have become quite expert in this line. Their fame has preceded them, as the above contract will verify.

**FARMERS ARE ELATED.**—San Luis Obispo Tribune: The farmers of the Santa Maria valley are elated over the prospect of excellent crops this season. Early grain looks better than at any time in many years; beets are doing quite well, and there is every indication that the bean crop will be a record breaker. Late grain would have been in a better condition had there been more rain during the month of April, but a fair crop is expected, nevertheless.

### SANTA CRUZ.

**DECREASE IN APPLE CROP.**—Watsonville Pajaronian: The packers report that the apple crop of Pajaro valley this year is not going to show as large a tonnage as last year. There will be a good crop, but not as heavy as was expected. The rest will do the trees good and the decreased yield will insure an improved quality. The apple trees of this valley have borne many heavy crops in successive years, and the quality of the fruit has been injured by the quantity produced.

### SONOMA.

**BLACKBERRIES IN DEMAND.**—Sebastopol Times: Some of the blackberry buyers in the local field are offering \$50 per ton for this fruit.

### SUTTER.

**INSULATING BARBED WIRE FENCES.**—Sutter County Farmer: The Bay

Cities Power Co. has a gang of men at work on their lines through the southeastern part of this county insulating the wire fences along the route. Recently near Redding one of their wires fell across a wire fence, killing a sheep herder who was leaning against it. Ground wires are placed in the fences, so that if a line falls across the same the current will not be carried along the fence, but go into the ground, without danger to any person or damage to any property.

**WHY NOT PLANT ASPARAGUS?**—Independent: In conversation with one of Sacramento's practical asparagus growers recently we were told the nature of the soil necessary to grow this favorite vegetable, and we find that the description tallies exactly with the soil found along the Yuba City slough. Strong alkaline land is especially adapted to growing asparagus. There is much of our slough land which is too strong of alkali to grow trees or alfalfa, but up to this time no one seems to have considered the advisability of raising asparagus. Our Sacramento informant stated that from land suited to raising this vegetable the returns averaged from \$300 to \$600 per acre, net to the grower. Such profits seem almost out of reason, but as we have no means at hand to contradict this statement we accept it as true. The first of our people to experiment with this vegetable on a large scale is Mrs. Mary Smith of the Meadow farm. She is arranging to plant six acres.

### TULARE.

**GOT RID OF PEAR BLIGHT.**—Register: Thos. Thompson, who has a little place on the outskirts of Tulare, had a pear orchard of thirty-five trees or more that was early attacked with the dreaded blight. Mr. Thompson did not know what to do to defend his trees, but unlike many others he thought that he must do something and not surrender without striking a blow, so he went into the orchard and cut out the infected limbs as soon as he detected the infection, cutting away below the blight and squirting a bit of coal oil from a common oiler on the freshly cut stub of limb. The result is that he has the best promise of a crop in the neighborhood and not a sign of the blight at this time anywhere in the orchard.

**PUMP IRRIGATION.**—W. J. Browning, who lives 3 miles southeast of Tipton, has recently installed a pumping plant and has given it a thorough test. This plant consists of a 14-inch well sunk to a depth of 84 feet. A 10-inch centrifugal pump is set over the well in a pit 22 feet deep, just at the normal water surface. The water is forced in a rushing stream 14 inches above the top of the 14-inch discharge pipe, and yet the water level drops only 16 feet. The discharge is 2500 gallons per minute.

**HOW TO GROW SORGHUM.**—Register: Mr. O. F. Manock, who lives 1½ miles southeast of Tulare, has been a grower of sorghum more or less every year since he has been in Tulare county, and we are indebted to him for the following suggestions as to how to get the best results: He plants in drills, sowing it one way, with drills 4 feet apart, and the hills 2½ to 3 feet apart, from eight to twelve seeds to the hill. Plant any time after danger from frost is over and up into June. Irrigate first and plow thoroughly and harrow down, then plant and afterward cultivate once; no law against cultivating more, but once will ordinarily do. Can use for milch cows about the time the beads begin to turn and on up to frost time, but must cut before frost or it will make milk and butter taste. Stock eat it all up clean and no bad results ever experienced. On good, strong land it will grow 10 to 12 feet high and yields more than any other forage plant Mr. Manock has grown. One irrigation, before planting, is sufficient and it will grow with less water than even Egyptian corn. Mr. Manock has always grown sorghum after taking off a crop of grain hay, and has had it ready to feed in ninety days. Roots will stool out to as high as twenty stalks to the hill and mature just as well. Roots are large and go deep and not easy to plow out.

### YOLO.

**SQUIRRELS LIKE CHICKENS.**—Woodland Democrat: Mrs. Ed Jacobs, of Jacobs Corners, is having a rather discouraging experience. A few days ago she took from an incubator a brood of 135 young chickens. In a few days she noticed the disappearance of some of them. The loss continued with such regularity that she concluded to put a watch upon them. As a result she discovered that ground squirrels were raiding the hennery and carrying off the young chickens.

**Grim figures prove the death rate among children in summer, an anxious time for mothers because bowel troubles are rampant. What a mercy it is that we have Perry Davis' Painkiller to save our little ones.**



## THE HOME CIRCLE.

## Drifting.

My soul to-day  
Is far away,  
Sailing the Vesuvian Bay;  
My winged boat,  
A bird afloat,  
Swims round the purple peaks remote—

Round purple peaks  
It sails and seeks  
Blue inlets and their crystal creeks,  
Where high rocks throw,  
Through deeps below,  
A duplicated golden glow.

Far, vague and dim,  
The mountains swim;  
While on Vesuvius' misty brim  
With outstretched hands  
The gray smoke stands  
O'erlooking the volcanic lands.

Here Ishia smiles  
O'er liquid miles;  
And yonder, bluest of the isles,  
Calm Capri waits  
Her sapphire gates  
Beguiling to her bright estates.

I heed not, if  
My rippling skiff  
Float swift or slow from cliff to cliff—  
With dreamful eyes  
My spirit lies  
Under the walls of Paradise.

Under the walls  
Where swells and falls  
The bay's deep breast at intervals.  
At peace I lie,  
Blown softly by,  
A cloud upon this liquid sky.

The day so mild,  
Is Heaven's own child,  
With earth and ocean reconciled—  
The airs I feel  
Around me steal  
Are murmuring to the murmuring keel.

Over the rail  
My hand I trail  
Within the shadow of the sail.  
A joy intense,  
The cooling sense  
Glides down my dreamy indolence.

With dreamful eyes  
My spirit lies  
Where summer sings and never dies—  
O'erlaid with vines,  
She glows and shines  
Among her future oil and wines.

Her children hid  
The cliffs amid,  
Are gamboling with the gamboling kid;  
Or down the walls,  
With tipsy calls,  
Laugh on the rocks like waterfalls.

The fisher's child  
With tresses wild,  
Unto the smooth, bright sand beguiled,  
With glowing lips,  
Sings as she skips,  
Or gazes at the far-off ships.

Yon deep bark goes  
Where traffic blows,  
From lands of sun to lands of snows—  
This happier one  
Its course has run  
From lands of snow to lands of sun.

O happy ship  
To rise and dip,  
With the blue crystal at your lip!  
O happy crew,  
My heart with you  
Sails and sails, and sings anew!

No more, no more  
The worldly shore  
Upbraids me with its loud uproar!  
With dreamful eyes  
My spirit lies  
Under the walls of Paradise!

—Thomas Buchanan Read.

## A Lucky Blunder.

The postman tossed a half dozen letters on Russell Webster's desk and passed along. Russell dropped the morning paper and picked up the mail. He hurried through the enclosures until he reached the last one. Then he raised the heavy white envelope and looked hard at the dainty address. He was still staring at it as he ripped off the end of the envelope and drew out the sheet within. A half moment later he softly whistled. He puckered his brows and whistled again. Then he turned in his desk chair so that a bet-

ter light would fall on the letter, and slowly read it aloud.

"Sir," it began, "your extraordinary communication is at hand. I can think of no reason that could possibly prompt the declaration you have made. I do not look upon you even as a friend. What you ask is simply impossible, and I beg you will never allude to the matter again. Very truly,  
"CICELY HAMMOND."

A smile suddenly spread across the attractive face of the reader.

"Well," he murmured, "that's a decidedly peculiar way in which to answer a simple offer for a piece of real estate. Hanged if it isn't serious enough to be the refusal of a proposal of marriage. By jove, that's exactly what it is! Is anything the matter with me? Have I been proposing to some indignant maiden unawares? Where's my letter-book?" He found the volume and turned back the flimsy pages. "Here it is," he murmured, and read the copy aloud.

"MISS CICELY HAMMOND, CITY—Dear Madam: I am authorized to offer you \$11,000 for your lot at corner of Hayes avenue and Milburn street; cash payment in full to be made at time of transfer. An early reply will oblige yours very truly.

"RUSSELL WEBSTER."

He held the book away from him and stared hard at the copy. Then he laughed. "The most anxious old maid that ever longed to change her name couldn't mistake that for a proposal," he chuckled. "No, there's some blunder, but it isn't mine." He looked again at the writing on the singular letter. "Nice paper," he said, "and beautiful handwriting—and a very agreeable odor. By George, I see how it is! It's the old blunder of getting the envelopes mixed. Wonder what the other fellow will think when he gets my letter. He certainly has missed a hard setdown. Say, this ought to be straightened out right away. Blame me if I don't go right up there and see the lady. It's the gentlemanly thing to do. I can easily see that it's no joke from her point of view."

He looked at his watch, took his hat and hurried to the elevator. A little later, as he sat back in a forward corner of the electric car, he tried to recall all he had heard about the lady. She had very lately taken up her residence in one of the fashionable suburbs. She had come into possession of the property of a deceased citizen, and was reputed very wealthy. She had been abroad. Russell recalled seeing her name in one of the daily papers in an item about local tourists. He pictured her as a woman of mature age, of presumable intelligence and refinement, and with a distaste for the demands of active society. And while he was still busy with his imaginary portrait the conductor called the street where the lady resided.

It was a stately and handsome home of the earlier type of architecture, and the grounds were large and beautifully kept. Russell noticed that painters were at work on the front of the residence, and a board across the entrance steps barred the way. He stepped around to the side door and rang the bell.

It was answered by a young woman—a young woman who wore a light stuff gown and a neat white apron. Russell looked at this sudden vision admiringly.

"Is Miss Hammond at home?" he asked.

"Have you an appointment?" inquired the young woman, and Russell was much pleased with the mellow resonance of her tones. He had a theory that the feminine voice was an excellent guide to the feminine character.

"No," replied Russell, "but my business is of a somewhat urgent as well as personal nature."

The young woman looked at him a little doubtfully.

"Come in," she said, and ushered him into a handsome apartment that seemed to combine the purposes of both office and library. She motioned Russell to a chair and paused beside the

large writing table in the center of the roomy apartment as if waiting for the caller to announce his business.

"My card," said Russell.

The young woman glanced at the pasteboard.

"The answer," said Russell, with a little catch in his voice, "was not entirely satisfactory, and I thought it would be better for all concerned to ask for a clearer reply from Miss Hammond herself."

The young woman opened her eyes. "I can't see how it could be made any clearer," she said.

"It depends on the point of view," said Russell. He looked about him as if for possible listeners and lowered his voice. "Are you Miss Hammond's secretary?" he asked.

"I do her writing," replied the young woman.

"Then," said Russell, "I think it would be fair to show you this extraordinary letter before Miss Hammond sees it." And he placed the document in her hand.

"Thank you for your consideration," she said, and unfolded the letter.

Suddenly a pink flush stole across her rounded cheek. Then she smiled. Then both flush and smile deepened, and, dropping her head on the table, she suddenly sank into the desk chair, and laughed and laughed.

"I am glad you find it amusing," said Russell. "Do you think Miss Hammond will consider it equally funny?"

The young woman looked up at him with swimming eyes.

"Sir," she said, "I must ask you to pardon me, but if I were certain I would receive my discharge the next minute I couldn't help laughing." And she laughed again.

"As I have said," remarked Russell, "I am very glad you can take it this way. It struck me as having an amusing side. Yet at the same time I can't help feeling a little anxious about the other fellow."

At this the young woman suddenly stopped laughing and opened her eyes very wide indeed. Then she hastily hurried to the most distant window and stared out for several moments. And Russell was quite sure she was laughing again. When she looked around her eyes were still wet.

"I beg your pardon for being so hysterical," she said, "but you see I really couldn't help it. That last remark of yours quite capped the climax."

"Then I am to understand that Miss Hammond's answer to my offer was also in the nature of a refusal?"

"It was," the young woman replied, with a quick catch in her voice.

"Would it be asking too much if I requested to know the exact wording of Miss Hammond's letter to me?" Russell asked.

The young woman hesitated.

"Circumstances have somewhat altered the situation," she said, "and yet I think it is your right to receive what was originally intended for you."

"I agree with you," said Russell; "but, of course, the original cannot be recalled. It may be possible, however, that the receiver will come here just as I have done to find out what it all means."

The girl shook her head.

"No," she said, "he will do nothing of the sort. I think you will understand why when you see a copy of the letter that was intended for you. Here it is."

She opened a book lying on the table and turned back a few pages. Russell came forward.

"It is just the penciled draft," she said, "but it was copied word for word."

Russell read it aloud.

"Your communication with offer is at hand. At present I have no intention of letting any of my property pass out of my hands. Very truly yours."

Russell looked around at the young woman.

"Can you blame me for laughing?" she said. "Isn't that about the curtest thing you ever saw in the way of a refusal of a marriage offer?"

Russell nodded.

"And—and does it fit the case?" he asked.

"Exactly," replied the young woman. "And it fits all the closer because it was done unconsciously."

"And the man will not suspect that a mistake has been made?"

"Not for a moment."

Russell shook his head ruefully.

"I'd awfully hate to deserve a reply like that," he said. "I don't believe I could." He looked at the young woman sharply. "I beg your pardon," he added, "but it appears to me that you are on extremely confidential terms with Miss Hammond."

"That is very true," said the young woman.

"I wasn't aware that answers to offers of marriage were usually left in the hands of secretaries," Russell went on.

The young woman laughed.

"There is no sentiment about offers of this sort," she said. "They are simply unimportant business details."

Russell laughed as much at the way in which the young woman said this, as he did at the idea.

"Then if I made a proposal of marriage to Miss Hammond," he went on, "I could expect that you would answer it?"

"Most assuredly," replied the young woman. "That is if it went by mistake to some puzzled dealer in real estate."

"Well, there is no immediate danger," said Russell. "But this brings me back to business. Of course I am to understand that my offer for the lot is rejected?"

"Of course," said the young woman. "You know the lot is worth much more," she said.

"Yes," he replied, "it is worth more. You understand that I was simply the agent of other parties."

"No doubt you thought that here was a chance to obtain a bargain from a simple and quite unsophisticated woman, who might be glad to jump at the chance of securing such a lump of cash."

"No," said Russell, "I didn't think anything of the kind. I simply tried to execute the commission that was given me. I would do the same if you intrusted me with a similar piece of business."

"Very well," said the young woman. "As a proof of your good faith you may take that same lot of land and let us see how good a price you can get for it."

"Does Miss Hammond authorize this?" Russell inquired.

"If the price is right," said the young woman, "she can be persuaded."

Russell took his hat.

"I will report in a few days," he said. He hesitated. "As I am, apparently, to transact this business with you, would it be a presumption to ask your name?"

"Not at all," replied the young woman. "I am Miss Vane."

"Good morning, Miss Vane," said Russell, and was gone.

He smiled over his singular adventure all the way back to the office. What a bright and charming girl that Miss Vane was. He wasn't quite sure that he had ever heard a woman's unrestrained laughter that was at all pleasant before. She must be a delightful companion, no matter how crotchety her old maid employer might be. He would show her what he could do with that corner lot. He would convince her of his honesty and energy.

Four days later he again greeted Miss Vane. He fancied she seemed pleased to see him.

"I have been quite fortunate," he said. "I found an out-of-town purchaser for the lot. Had to go out of town to find him, but nailed him at sight."

"And the price he offered?"

"Was \$16,000 cash—and it is a very good price, too."

"I trust," said Miss Vane, "that you have used no irregular means."

"What do you mean?"

"You didn't work on his sympathies, did you? You didn't tell him that Miss Hammond sorely needed the money? You didn't add she was a crotchety old maid and as stubborn as an army mule, did you?"

She said this with such an innocent



air that Russell couldn't feel offended.

"Sentiment would be of no earthly use with this man," he said. "He wants it and he's willing to give a fancy price for it. As for using Miss Hammond's personal peculiarities as an aid in the transaction, I couldn't well do that, because I never saw her."

"Very true," said Miss Vane. She hesitated a moment. "The price is satisfactory," she said. "Miss Hammond would have taken something less. Here are the deed and abstract. Will you kindly prepare the papers and arrange all the details?"

The transfer was completed a few days later when Russell handed Miss Vane a certified check for the amount.

"And how much does Miss Hammond owe you for your services?" she asked.

"The regular commission charged is 2%," he replied.

She unlocked a drawer of the table and drew out a package of bank bills and counted off the amount.

"There is \$320, I think," she said, "Please run it over."

Russell deftly ran through the pile and nodded, and then he counted off a certain amount and placed it on the table before the young woman.

"What's this?" she demanded.

"That's your share," he said. "Half and half, you know. I am perfectly well aware that without your aid. I couldn't have touched a penny of this sum. Don't look that way. You've earned it all right."

"B—but I can't take it," protested Miss Vane.

"Of course you can take it," said Russell. "You must take it. This isn't a gift. It's a cold-blooded business transaction. I fancy you'll know what to do with it. I'm quite sure that little windfalls of this sort never come amiss to me."

Miss Vane was about to speak, but Russell looked so determined that she changed her mind and gathered up the bills.

"Thank you," she said. "I'm quite sure I never earned so much money at one time before—if I earn it."

"You did," laughed Russell, as he arose.

"One moment," said Miss Vane. "Miss Hammond has been making inquiries about you. They are quite satisfactory. She wants a man of business. Some one who can attend to the details of the management of her estate. She favors you. It will not take all of your time at present. Later on she may require more from you. If you take the place you will report to me here twice a week. The salary can be arranged later when the duties of the place are fully determined, but I think you will find Miss Hammond a person of liberal views on this point. What do you say?"

Hammond looked at her with an air of indecision.

"What would you advise?" he asked. "I certainly would want to earn my money."

"There'll be no fear about that," laughed Miss Vane, and her smile was very attractive.

"Convey my thanks to Miss Hammond," he said, "and tell her I am pleased to accept her offer."

The oftener Russell met Miss Vane the more charmed he was with her. At the seventh meeting he was convinced he had loved her from the very start. At the eighth meeting he was fully satisfied that life would be a dismal wilderness without her. At the ninth he had the courage to say, "I suppose Miss Hammond would miss you greatly if you left her?"

"She couldn't do without me," said Miss Vane.

"Who could blame her?" murmured Russell, and then was instantly convinced that he had said something inexcusably bold. But he quickly rallied and remarked that it was strange he hadn't met Miss Hammond yet.

"Not at all," said Miss Vane, "she doesn't meet strangers."

"But I am not exactly a stranger," said Russell.

"You will see her some day," said Miss Vane. "At present she is interested in settling her affairs, and superintending certain improvements. When she returns from California she will

open up her house and strive to become acquainted with her new neighbors."

"To California?" repeated Russell.

"And do you go, too?"

"Yes," replied Miss Vane.

"And how long do you—I mean Miss Hammond intend to stay?"

"Six months, I believe."

Russell went back to his office with a heavy heart. Could he endure it to forego seeing that charming face for six whole months? He didn't think he could.

Then he plucked up his courage and sat down and wrote Miss Vane a love letter that was also an offer of marriage. It was a long letter. He told her about himself, his plans, his hopes, his present standing. He told her how she had come into his life a ray of sunshine, and how his admiration and respect and gratitude had all merged into love. Theirs was a brief acquaintance, he admitted, but they were both free and independent, and had but themselves to please.

It was a nice letter, a tender, earnest letter, yet Russell dropped it in the letter-box with fear and trembling, and how eagerly he seized his mail the next morning and ran through the letters.

There was just the briefest note in the familiar handwriting: "To avoid any possibility of further mistakes, will Mr. Webster call in person for a reply to his proposition?"

There was no name signed to this and Russell turned it over blankly. Then he took his hat and started out to learn his fate.

Miss Vane received him with grave courtesy, which was quite unlike her usual manner. He noticed that her cheeks were a little flushed and that there was a rose in her pretty hair.

"Sit down, Mr. Webster," she said, and fixed her gentle eyes upon him.

"Miss Hammond," she began with a little hesitation, "was much pleased with your letter."

"Miss Hammond?"

"She liked its manly ring and, of course, was highly gratified by the compliment it paid her."

"Miss Hammond, did you say?"

"She was even inclined to look upon your offer with favor, but wanted first to secure a personal interview."

Russell looked about him in an agony of apprehension.

"Miss Hammond!" he murmured. "Heavens! has there been another blunder?"

His troubled glance fell upon Miss Vane. She was silently laughing, and her eyes were moist as they met Russell's.

"No," she softly said, "there is no mistake this time, dear friend. Cicely Vane Hammond—Cicely Vane, until at her uncle's last request she took the name of Hammond—approves in person of your latest and best effort to advance her dearest interest."

And with a tender smile she extended both her hands.—W. R. Rose, in Cleveland Plain Dealer.

#### The Right Way to Blow the Nose.

The International Kindergarten Union Convention seems to have brought out considerable discussion, much humor and many women. "The address of President Eliot of Harvard University was highly instructive," said Charles Parton, of Boston, at the Murray Hill yesterday. "He made a plea for the education that educates by 'showing how,' and illustrated his plea with a little story. A friend of his became deaf not long ago, and the president asked him what was the cause. 'I was blowing my nose,' the friend answered, 'when suddenly I felt something snap in my ear, followed by aching and dullness. When the doctor came he said I had split the eardrum, and asked how I did it. I told him that I only blew my nose.' 'Well, if you had opened your mouth when you blew your nose, you would not now have a damaged eardrum,' the doctor answered. There was a man, President Eliot pointed out, who had lived seventy years, and had never been 'shown how' to blow his nose. The story made a deep impression on the convention, and it is safe to say that many a little kin-

dergarten child will be told to open his little mouth when he has recourse to his handkerchief. The other chief contribution of the convention was the decision is reached that spanking is good only for the circulation. The kindergarten is a great institution."

#### Collar Ironing Made Easy.

Supposing the collars have been washed and starched in hot starch in the usual way and thoroughly dried. Now see that they are bone dry—this is important.

Dissolve half a teaspoonful of borax in a very little boiling water. See that there are no lumps. Stir in the dissolved borax, keeping back any pitchings there may be, and add enough cold water to make the whole one pint.

Dip your collars in this, rubbing each, so that it may be thoroughly saturated. Squeeze as dry as possible, spread flat on a dry towel—in single layers—and roll the whole tightly up.

Starch late in the evening and they will be ready to iron early next morning.

Scour your flatirons before using by rubbing on a board on which some bathbrick has been scraped, then wipe with a soft cloth. They must be hot, but not hot enough to scorch. Pull a collar into shape, lay flat on the table, and iron on the wrong side until about half dry. If the iron sticks, either it is too hot or too cold, or the collar is too damp. Turn over, pull into shape and iron on the right side until quite dry. If you pulled it properly into shape there should not be a single crease.

A polishing board is one covered with one thickness of muslin only. Lay the collar on this, wring a clean piece of muslin out of cold water, rub lightly over the right side of the collar and iron again, pressing hard till it is dry and glossy. A proper polishing iron is much better for this than an ordinary one.

If you have let collars get too dry, sponge them lightly with cold water on the right side before beginning to iron.

#### Belgian Hare Joke.

In one of the public schools recently, a number of the small pupils were busily engaged in working problems in multiplication, with more or less satisfactory results.

After some time the teacher noticed one little fellow who seemed most unhappy. His cheeks were flushed, his hair tumbled and tears were very near the surface. The teacher said, in a kindly tone, "Well, John, what is the matter?"

"Oh, dear, I wish I was a rabbit!" replied the boy.

"A rabbit!" exclaimed the teacher, in astonishment. "Why on earth would you like to be a rabbit?"

"Well, my papa says they multiply so fast."—The Gentleman's Magazine.

#### Modest Mark.

The business methods of publishers came up for discussion at a recent literary gathering. William Dean Howells and Mark Twain were present.

"The spirit of the age is strenuous," said Mr. Howells, "and in order not to be behind the times the publishers modify the verbiage of the circus poster with scant politeness."

"They do," assented the humorist. "My publisher speaks of advertising my next book as a story by Mark Twain, with no further comment. But he shan't make a holy show of me with his vulgar advertising simplicity. I shall insist upon a street parade at the very least, because I am a modest man, and dislike to be made conspicuous."—New York Times.

AUNTIE (anxiously): Do you think you have had the proper training for a poor man's wife? Sweet Girl: Yes, indeed. Papa hasn't given me any spending money worth mentioning for years. I always get things charged.

## DOMESTIC ECONOMY.

### Domestic Hints.

ESCALLOPED POTATOES.—Boil and mash the potatoes with a little salt, butter and milk. Melt two tablespoons butter and beat it in till light. Bake in patty-pans in a quick oven until brown. While hot, paint with butter and add a thick grating of cheese. The cheese may be omitted if preferred.

HAM CROQUETTES.—Take two cups of fine-minced ham, or better one cup of ham and one cup of veal, mix with one-quarter cup of breadcrumbs. Add two tablespoonfuls of stock and season with one teaspoonful of salt and one-quarter teaspoonful of pepper. Add the yolk of two eggs, make into small balls, cover with egg and breadcrumbs and fry.

CALVES' BRAINS SAUTE.—Thoroughly wash and parboil the brains in water with one teaspoon vinegar fifteen minutes. Remove and skin. Break them up and mix with a fork to a paste with one beaten egg, pepper and salt. Have ready in a pan some hot butter, and carefully drop brains into the pan by the spoonful. Fry a delicate brown. Turn gently. Serve while hot.

CHICKEN WITH ALMOND SAUCE.—Cut up a young chicken as for fricasee; fry a golden brown in hot lard. Put the chicken on a hot platter and make the sauce. Thicken one tablespoonful of lard (in which the chicken was fried) with one tablespoonful of flour; when the flour is cooked, add one pint of cream, one tablespoonful of finely chopped parsley and one cupful of chopped blanched almonds. Let it boil for five minutes and pour around the chicken.

CHOCOLATE CREAM PEPPERMINT WAFERS.—Use the ready-made peppermint wafers, not crystallized, to be found in almost any candy store. Melt down a cake of "Medallion" full vanilla, sweet chocolate. As soon as the chocolate becomes soft, but not thin, dip or roll the plain peppermint wafers in it, one at a time, with a three-tined steel fork; drop them in regular rows across a sheet of buttered manila paper or wax paper and set them in a cool room to dry and harden. The other wafers of the cream sort, wintergreen, maple, coffee and the like may be treated in like matter.

### Hints to Housekeepers.

In making hash never stir with a spoon. It makes the mixture disagreeably pasty. Toss lightly with a fork.

A pinch of ground cloves in a warmed-up meat dish is often a pleasing addition. Nutmeg is the spice to use with poultry.

If the liquor about olives gets emptied accidentally, make a fresh brine of salt and water and replace the olives in their bottle.

A pint of new potatoes, too small to serve in presentable fashion, may be boiled, skinned and covered with white sauce, or allowed to cool and served whole as a potato salad with a few shredded chives sprinkled over them.

A simple way to spice pears, that may be pigeon-holed for use later in the season, is to bring to the boiling point one quart of vinegar, four pounds sugar, one ounce stick cinnamon and one-half ounce cloves; then add eight pounds pears that have previously been pared and cooked until tender. Take out the fruit, drain and put in glass jars. Boil the syrup until thick, and pour over them.

A white sauce that is excellent to serve with hot steamed puddings is made by dissolving in half a cupful of cold water a tablespoonful of cornstarch. When blended add half a cupful of powdered sugar, a pinch of salt, and a cupful of boiling water. Put on the fire in a double boiler and boil fifteen minutes, stirring constantly. Add the whites of two eggs beaten stiff, a teaspoonful of vanilla and two tablespoonfuls of sherry. Remove from the fire and beat until cold.



## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, June 11, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July.	Sept.
Wednesday.....	71 1/4 @ 72	69 1/4 @ 70 1/4
Thursday.....	72 3/4 @ 71 1/4	70 1/4 @ 69 3/4
Friday.....	71 1/4 @ 72	70 @ 71
Saturday.....	71 1/4 @ 72 1/4	70 1/4 @ 71 1/4
Monday.....	71 3/4 @ 71 1/4	70 3/4 @ 69 3/4
Tuesday.....	70 3/4 @ 71 1/4	69 3/4 @ 70 1/4

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday.....	34 1/4 @ 35 1/4	27 1/4 @ 28 1/4
Thursday.....	35 1/4 @ 36 1/4	28 1/4 @ 29 1/4
Friday.....	36 1/4 @ 37 1/4	29 1/4 @ 30 1/4
Saturday.....	37 1/4 @ 38 1/4	30 1/4 @ 31 1/4
Monday.....	35 1/4 @ 36 1/4	28 1/4 @ 29 1/4
Tuesday.....	35 1/4 @ 36 1/4	28 1/4 @ 29 1/4

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	1 11 @ 1 10 1/4	—
Friday.....	1 10 1/4 @ —	—
Saturday.....	1 11 @ 1 11 1/4	—
Monday.....	1 10 1/4 @ 1 10 1/4	—
Tuesday.....	1 10 1/4 @ 1 10 1/4	—
Wednesday.....	1 10 1/4 @ 1 10 1/4	—

## WHEAT.

Although stocks of wheat in the State, as reported by the Merchants' Exchange, are of comparatively light volume and are smaller than at corresponding date for the past four years, shippers reduced their bids 25c. per ton the latter part of last week. Having few vessels loading at present, and these mostly provided for, they are in position to bear the market. In fact, it is the exception when the exporters are not on the bear side, and especially at the beginning of the season, when their holdings are light. With only 125,000 tons of wheat in entire State on 1st inst., the amount which will be carried over into the new cereal year commencing with July must prove small. No heavy outward movement is looked for, however, the current month, as at this writing there are only nine vessels on the engaged list for grain loading, and five of these are for new crop. That there will be much chartering during the balance of the month for immediate loading is altogether improbable. At the same time the prospects are good for a free outward movement later on, as the deep-sea ships now headed this way and suited for the grain carrying trade represent a grain carrying capacity of 400,000 tons, which is an increase of 50% on the amount of ocean tonnage headed for this port a year ago. The ships now en route will be practically all for new crop, as it would be extraordinary conditions which would permit of a much closer clean-up of wheat than has been effected in this State for the season now closing.

California Milling.....	1 15 @ 1 17 1/4
Cal. No. 1 shipping, alongside.....	1 11 1/4 @ —
Oregon Valley.....	— @ —
Washington Blue Stem.....	— @ —
Washington Club.....	— @ —
Off qualities wheat.....	1 10 @ —

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	68 1/4 @ 68 3/4	68 3/4 @ 68 1/4
Freight rates.....	37 1/4 @ 38 1/4	23 1/4 @ 25 1/4
Local market.....	97 1/4 @ 1 00	1 10 @ 1 11 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:  
December, 1902, delivery, \$1.11 @ 1.10 1/2.  
May, 1903, delivery, \$— @ —.  
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.10 1/2 @ 1.10 1/2; May, 1903, \$— @ —.

## STOCKS OF GRAIN IN STATE JUNE 1.

The San Francisco Produce Exchange gives the following totals of the stocks of grain and flour remaining in the State on June 1 for the four years named:

	1902.	1901.	1900.	1899.
Flour, bbls.....	177,173	174,777	95,090	70,900
Wheat, cts.....	2,505,780	3,746,820	8,367,840	3,394,166
Barley, cts.....	567,080	746,230	2,108,530	232,420
Oats, cts.....	112,320	43,580	147,980	23,460
Rye, cts.....	53,800	80,260	54,240	10,560
Corn, cts.....	49,980	13,820	28,780	25,560
Beans, sks.....	312,746	118,000	114,088	300,973

## FLOUR.

Business might be more active, but considering the time of year and the quantity

offering, the movement is very fair. Prices are being sustained at previously quoted range, although market is not noteworthy for firmness, and if any special selling pressure were exerted, lower figures would prevail. Stocks of flour in the State are reported at 177,000 barrels, being practically the same as a year ago.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

## BARLEY.

Supplies of old barley have been seldom much lighter at corresponding date, only 28,350 tons being reported remaining in the State on 1st inst., as against 37,300 tons a year ago, and 105,000 tons on June 1st, 1900. The market shows weakness, however, for new crop offerings, as is to be expected at the opening of the season. Transactions in new barley have been mainly within range of 87 1/2 @ 92 1/2 c. per cental, San Francisco or Port Costa delivery, but in most instances growers are holding for better figures. Old barley is held at a little higher range than new, and is commanding more in a limited way, which will continue to be the case for thirty or sixty days, or until new is sufficiently seasoned to be desirable for immediate use.

New Barley.....	85 @ 90
Feed, No. 1 to choice old.....	92 1/4 @ 95
Feed, fair to good.....	90 @ 92 1/4
Brewing, No. 1 to choice.....	1 00 @ 1 02 1/4
Chevalier, No. 1 to choice.....	— @ —
Chevalier, poor to fair.....	— @ —

## OATS.

The market is not showing much activity, and the tendency is to easier figures than have been lately current, particularly on colored kinds, which are in larger spot supply and are being more freely offered than white descriptions. Buyers are operating very slowly, anticipating arrivals of new at an early date.

White Oats, fancy feed.....	1 42 1/4 @ 1 45
White, good to choice.....	1 35 @ 1 40
White, poor to fair.....	1 30 @ 1 32 1/4
Gray, common to choice.....	1 35 @ 1 40
Milling.....	1 42 1/4 @ 1 47 1/4
Surprise, good to choice.....	1 45 @ 1 50
Black Russian.....	1 15 @ 1 25
Red.....	1 15 @ 1 32 1/4

## CORN.

Market is quiet and devoid of noteworthy strength, although there are no marked changes to record in quotable values. The stocks in State are reported at 2,500 tons, which is no large quantity, but still is in excess of amount reported on hand at corresponding date since 1898, when there were 5,600 tons on hand.

Large White, good to choice.....	1 50 @ 1 55
Large Yellow.....	1 45 @ 1 50
Small Yellow.....	1 47 1/4 @ 1 52 1/4

## RYE.

Not much offering, neither is there active inquiry for this cereal at present. Values remain practically as last quoted.

Good to choice.....	90 @ 95
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## BUCKWHEAT.

There are no evidences of any trading worth mentioning. Values are notably unchanged, but are necessarily largely nominal.

Good to choice.....	1 55 @ 1 70
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## BEANS.

In the matter of asking figures and movement, the market has not changed materially since date of last report. Trade is light, and transfers at extreme current rates are confined mainly to the filling of small orders for immediate requirements. Dealers are not stocking up ahead to any noteworthy extent, and there is almost an entire absence of speculative inquiry. Supplies in this center are principally Large and Small Whites, Pinks and Bayos, the Whites and Pinks taking the lead decidedly as to quantity offering. Stocks in the State are given at 313,000 sacks, about evenly divided between San Francisco and the southern bean district. Reported stocks are the largest for June since 1898, when 560,000 sacks were stated as being on hand. On June 1st, 1899, the quantity reported was close to the present figures, being 309,000 sacks.

Pea, fair to good, 100 lbs.....	3 00 @ 3 25
Small White, good to choice.....	2 40 @ 2 50
Lady Washington.....	2 30 @ 2 40
Pinks.....	2 10 @ 2 20
Bayos, good to choice.....	2 85 @ 3 00
Reds.....	2 25 @ 2 50
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	3 65 @ 3 75
Black-eye Beans.....	4 50 @ 4 75
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

## DRIED PEAS.

Virtually nothing doing in a wholesale

way in dried peas of any description. Quotations are based mainly on asking figures, which remain about as last noted.

Green Peas, California.....	1 50 @ 2 00
Niles Peas.....	1 75 @ 1 80

## WOOL.

Most of the choice Spring wools now in store here are in second hands and are being very steadily held. These wools were mostly purchased in the interior at stiffer prices than could be realized for them at this date on either local or Eastern manufacturing account. Some heavy and defective wools are being offered from first hands. These have to be scoured, but like the better wools are held above the parity of Eastern values. The impression prevails that any changes East in the near future are almost certain to be to an improved condition.

	SPRING.
Humboldt and Mendocino.....	16 @ 18
Northern Sacramento Valley, free.....	15 @ 16 1/4
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	12 @ 15

## HOPS.

Business locally is in the main of a light jobbing character, with spot stocks of quite limited proportions. A lot of 24 bales arrived the past week from Australia, an unusual occurrence. Free shipments were made from this coast to Australia, prior to the Australian Government placing a practically prohibitory duty on imported hops. Local jobbers are quoting 15 @ 18c. for 1901 hops, and 13 @ 14c. for choice new to arrive. Following is a New York review of the Eastern market: "Added strength has come to the market again this week, not because of any material enlargement of the trade, but owing to the narrowness of the supply. It has been several years since stocks in the country were so light at this season, and with nearly four months of the best part of the brewing season before us, holders are naturally expecting good prices for the hops which they now have on hand. Some dealers have very little stock left and have been making full bids on this market, and while the quantity in brewers' hands is uncertain they are showing enough interest to warrant the belief that everything will clean up closely before the new crop is marketed. Quotations have undergone some revision during the week and at the close the feeling is quite strong on the basis of 16 @ 21c. for New York hops of last crop, and 16 @ 20c. for Pacific coast stock of 1901 yield. Some holders ask more for special lots. Advices from this State report cold weather during the week and rather a slow growth of vine, especially in the weaker yards. London cables report the English crop quite backward."

## HAY AND STRAW.

Demand for hay is not brisk, and for other than most desirable qualities of old hay the market is lacking in firmness. New hay is arriving in moderate quantity, with sales of the same mainly within range of \$8 @ 9.50 for wheat and \$7 @ 8.50 for volunteer oat. Business in straw is of light proportions and at generally unchanged values.

Wheat, good to choice.....	9 00 @ 12 50
Wheat and Oat.....	9 00 @ 12 00
Oat, good to choice.....	8 00 @ 10 50
Barley.....	7 50 @ 9 00
Alfalfa.....	— @ —
Clover.....	7 00 @ 8 50
Compressed.....	9 00 @ 12 50
Straw, 3 bale.....	40 @ 50

## MILLSTUFFS.

The stiff prices which have been lately ruling for Bran and Middlings have attracted shipments this way from the North, but values have not been materially disturbed in consequence of the increased supplies. Market for both Rolled Barley and Milled Corn showed weakness, but more particularly the former, with prospects of soon ruling still lower.

Bran, 3 ton.....	17 50 @ 18 50
Middlings.....	20 50 @ 22 50
Shorts, Oregon.....	18 50 @ 20 50
Barley, Rolled.....	19 50 @ 20 50
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

## SEEDS.

Not much offering of any description. Market throughout is quiet at practically same values as last quoted. Spot stocks of Mustard are of decidedly light volume. Business doing in bird seed at full figures quoted is mostly of a small jobbing character.

	Per ctl.
Flax.....	2 50 @ 2 75
Mustard, Yellow.....	3 50 @ 3 75
Mustard, Trieste.....	3 30 @ 3 60

	Per lb.
Canary.....	3 1/4 @ 3 1/2
Rape.....	1 1/4 @ 1 1/2
Hemp.....	3 1/4 @ 3 1/2

## BAGS AND BAGGING.

The Grain Bag market is without improvement. All holders are anxious to unload, seeing nothing to be gained by carrying stock into another season. In other bags and bagging there is nothing of consequence doing and no changes to record in quotable prices.

Calcutta Grain Bags, buyer June-July.....	5 1/2 @ —
Calcutta Grain Bags, spot.....	5 1/2 @ —
San Francisco Grain Bags, 22x36, spot.....	5 1/2 @ —
San Quentin Bags, 30 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	8 1/4 @ —
Gunnies.....	— @ —
Bean Bags.....	5 1/4 @ 5 1/2
Fruit Sacks, cotton, three sizes.....	5 1/2, 6, 6 1/2
Fruit Sacks, Jute.....	7 @ 7 1/4

## HIDES, PELTS AND TALLOW.

There is a good demand for Hides, both dry and salted stock, and market is firm at the figures ruling. Pelt market is quiet, but values are being fairly well maintained at the same range current for some weeks past. Tallow is not lacking for custom, and more than is offered could be readily placed at full current figures.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @ —	9 @ —
Medium Steers, 48 to 56 lbs.....	10 @ —	8 @ —
Light Steers, under 48 lbs.....	9 @ —	7 1/4 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	7 1/4 @ —
Light Cow Hides, under 50 lbs.....	9 @ —	7 1/4 @ —
Stags.....	6 1/4 @ —	— @ —
Wet Salted Kip.....	8 @ —	7 @ —
Wet Salted Veal.....	9 @ —	8 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ —	14 @ —
Dry Kip and Veal, 11 to 16 lbs.....	13 @ —	11 @ —
Dry Calf, under 4 lbs.....	17 @ —	15 @ —
Salted Horse Hides, large.....	2 75 @ —	— @ —
Salted Horse Hides, medium.....	2 25 @ —	2 50 @ —
Salted Horse Hides, small.....	1 25 @ —	— @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, medium.....	1 50 @ —	— @ —
Dry Horse Hides, small.....	1 00 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 3/4 skin.....	80 @ —	1 20 @ —
Pelts, medium, 3/4 skin.....	50 @ —	75 @ —
Pelts, short wool, 3/4 skin.....	30 @ —	40 @ —
Pelts, shearing, 3/4 skin.....	15 @ —	30 @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good medium.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/4 @ —	— @ —
Tallow, No. 2.....	4 1/4 @ —	4 1/4 @ —
Goat Skins, perfect.....	30 @ —	37 1/4 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

## HONEY.

There is not much of any description coming forward at present or being offered for sale. To purchase freely, better figures than are warranted as quotations would have to be paid. No evidences are displayed, however, of large operators doing any noteworthy competitive bidding so far on this season's product, although the crop is not coming up to expectations in point of quantity.

Extracted, White Liquid.....	6 @ —
Extracted, Light Amber.....	4 1/4 @ —
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	10 @ 12
Amber Comb.....	7 @ 10
Dark Comb.....	6 @ 7

## BEESWAX.

Supplies are of light proportions and market is firm at rates quoted. No trouble is experienced in securing prompt custom for all desirable offerings.

Good to choice, light, 3 lb.....	27 @ 29
Dark.....	25 @ 26

## LIVE STOCK AND MEATS.

Market for Beef has remained about as last quoted, with offerings not particularly heavy but ample for existing requirements. Mutton is selling at quotably unchanged values, with demand fair. Lamb is not in heavy supply and values for good to choice offerings are being well maintained at the quoted range. Veal is not arriving in large quantity at present and market for desirable offerings is firm. Hogs are in fair receipt, with prices steady and no special fluctuations looked for in the near future.

Beef, first quality, dressed, net 3/4 lb.....	7 @ 7 1/4
Beef, second quality.....	6 1/4 @ 7
Beef, third quality.....	6 1/4 @ —
Mutton—ewes, 8 @—c; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 125 to 200 lbs.....	6 1/4 @ 6 1/2
Hogs, small, fat.....	6 1/4 @ 6 1/2
Hogs, large, hard, over 200 lbs.....	6 1/4 @ 6 1/2
Hogs, soft or acorn fed.....	5 1/4 @ —
Hogs, country dressed.....	7 1/4 @ 8
Veal, small, 3/4 lb.....	8 @ 9 1/4
Veal, large, 3/4 lb.....	7 @ 8 1/4
Lamb, spring, 1 lb.....	9 @ 9 1/4

## POULTRY.

The demand showed some improvement as compared with several weeks preced-



ing, owing to the large number of visitors in the city from Eastern and coastwise points. There was also some increase in offerings of poultry, both domestic and Eastern. Values were maintained at a little higher range than preceding week, with market firm for all good to choice stock. Some sales of extra choice fowls were made above quotations. Chickens received the most attention, medium size to full grown bringing the best figures.

Turkeys, dressed, choice.....	—@—
Turkeys, alive, Hens, # lb.....	13 @ 14
Turkeys, alive, Gobblers, # lb.....	13 @ 14
Hens, California, # dozen.....	4 50 @ 5 00
Roosters, old.....	4 50 @ 5 00
Roosters, young (full-grown).....	6 50 @ 8 00
Fryers.....	4 50 @ 6 00
Broilers, large.....	3 00 @ 4 00
Broilers, small to medium.....	2 25 @ 2 50
Ducks, old, # dozen.....	3 50 @ 4 00
Ducks, young, # dozen.....	4 50 @ 6 00
Geese, # pair.....	1 25 @—
Goslings, # pair.....	1 25 @ 1 50
Pigeons, old, # dozen.....	1 75 @—
Pigeons, young.....	1 50 @ 1 75
Hare, Belgian, large, # doz.....	4 50 @ 5 00

## BUTTER.

While values are without appreciable change, there is more than enough creamery product to accommodate the demand at extreme current rates. Some favorite marks are going in a small way at 22¢, but buyers who are not wedded to brands manage to secure for 1¢ less about as fine butter as the market affords. Select dairy is not in heavy stock and sales of the same are effected up to 21¢. There is not much low-grade butter of any sort and such is now relatively the dearest on the market.

Creamery, extras, # lb.....	21 @—
Creamery, firsts.....	20 @—
Dairy, select.....	20 @—
Dairy, firsts.....	19 @—
Mixed store.....	17 @—

## CHEESE.

Supplies of new domestic are more than ample for immediate needs, but values are fairly steady. Rather than accept lower figures some holders are placing stocks in cold storage. Eastern cheese is easier, the market East for new having just fairly opened.

California, fancy flat, new.....	8 1/2 @ 9 1/2
California, good to choice old.....	— @—
California, fair to good.....	— @—
California, "Young Americas".....	8 1/2 @ 10

## EGGS.

Prices remain at about same range as last quoted, receivers as a rule storing surplus rather than make any noteworthy concessions. There is not much range in prices, owing to little difference in quality, the weather thus far this season having been exceedingly favorable for this product. Some Eastern eggs are being landed here within range of 17¢ to 21¢, as to quality, but mostly of the cheaper grades.

California, select, large, white and fresh.....	20 @—
California, select, irregular color & size.....	17 1/2 @ 19
California, good to choice store.....	17 @ 17 1/2

## VEGETABLES.

Most kinds of vegetables in season were in ample supply for current needs. Onions were in sufficiently liberal receipt to keep market favorable to buyers most of the week, but at the close arrivals were light and market advanced. Asparagus sold at a wide range, owing to great difference in quality. Green Peas and String Beans were plentiful and cheap. A car of Tomatoes arrived from Mississippi and California product was also in fair receipt. The Green Corn arriving was mostly of common quality and such was not eagerly sought after.

Asparagus, # box.....	1 00 @ 2 25
Beans, Refugee, # lb.....	3 @ 4
Beans, String, # lb.....	2 1/2 @ 3
Beans, Wax, # lb.....	2 1/2 @ 3 1/2
Cabbage, choice garden, # 100 lbs.....	50 @—
Corn, Green, # doz.....	15 @ 25
Cucumbers, # box.....	75 @ 1 25
Egg Plant, # box.....	1 25 @ 1 75
Garlic, # lb.....	3 @ 4
Onions, Yellow Danver, # cental.....	— @—
Onions, New Red, # cental.....	55 @ 75
Peas, Sweet garden, # lb.....	1 1/2 @ 2
Peas, good to choice, # sack.....	75 @ 1 25
Peppers, Green, # lb.....	8 @ 12 1/2
Rhubarb, # box.....	50 @ 1 00
Summer Squash, # box.....	75 @ 1 00
Tomatoes, # box.....	2 00 @ 2 50

## POTATOES.

Market for choice to select new Burbanks had been most of the time since last review fully as favorable to sellers as during preceding week, with demand good for offerings of above description. Early Rose were not much sought after and sold at a comparatively low range of values. Old potatoes are still offering in considerable quantity, mainly from Oregon, but business in old is now of a light order and at generally low figures. Quotations below are for new unless otherwise noted.

Burbanks, choice to select, # cental.....	1 25 @ 1 75
Early Rose.....	90 @ 1 25
Old Burbanks in sacks, # cental.....	90 @ 1 25
Petaluma and Tomales Burbanks.....	— @—

Oregon Burbanks, old.....	1 10 @ 1 35
River Reds.....	— @—
Sweets, Merced, # cental.....	— @—

## The Fruit Market.

## FRESH FRUITS.

Noteworthy in the receipts of the week were the first Nutmeg Melons of the season. They came from Arizona and some early sales were effected up to \$5 per crate, with the quotable range since \$2.50 @ 4.00 per crate, as to size of melon. Black Figs from Arizona were in increased supply and sales of the same above \$2 per box were the exception. Apricots made a better representation than preceding week, some Royals and other late varieties beginning to arrive in quotable quantity. Pringles were not much sought after, but choice of the later varieties of apricots were salable to advantage. Peaches were not plentiful and it was the exception where offerings of the same showed choice quality. Early Pears and Plums made a fair showing as to quantity, and quality averaged better than preceding week. Cherries inclined in favor of buyers, especially for ordinary black and white, with a large proportion of offerings of this description. Royal Annes were not plentiful nor are there likely to be excessive offerings of this variety. Currants sold at a decline. Nearly all kinds of berries now in season were in good supply, with the general trend of values in favor of the consumer.

Apples, # fancy, 4-tier box.....	— @—
Apples, good to choice, # 50-lb. box.....	— @—
Apples, common to fair, # 50-lb. box.....	75 @ 1 50
Apricots, Royal, # crate.....	1 00 @ 1 35
Cherries, Black, # box.....	30 @ 50
Cherries, White, # box.....	25 @ 40
Cherries, Black, in bulk, # lb.....	2 1/2 @ 4
Cherries, White, in bulk, # lb.....	2 @ 3 1/2
Cherries, Royal Anne, # box.....	50 @ 75
Cherries, Royal Anne, # lb.....	5 @ 7
Blackberries, # crate.....	1 2¢ @—
Raspberries, # crate.....	75 @ 1 00
Currants, # chest.....	2 50 @ 5 00
Gooseberries, common, # chest.....	2 50 @ 3 00
Gooseberries, English, # lb.....	3 1/2 @ 5
Logan Berries, # chest.....	5 00 @ 7 00
Peaches, # box.....	1 00 @ 1 25
Pears, Madeleine, 20 lb. box.....	40 @ 65
Plums, Cherry, # box.....	50 @ 75
Strawberries, Longworth, # chest.....	6 00 @ 9 00
Strawberries, Melinda, # chest.....	4 00 @ 6 00

## DRIED FRUITS.

In the market for cured and evaporated fruits there is no opportunity at the moment of any noteworthy activity in this center, stocks in the hands of the wholesale and jobbing trade being too light for any special movement. Stocks of Apricots have been reduced to such slim proportions that it is only with great difficulty small orders can now be filled. It is doubtful if in the entire State a carload of Apricots of last year's product now remains, and it will be fully a fortnight before there will be any noteworthy spot offerings of new crop. Apples are also almost wholly out of stock, probably a carload all told, including odds and ends. Peaches are in better spot supply than any other variety aside from Prunes, and it is estimated that ten carloads would absorb all the peaches now available for this market. Pear are practically all gone. Plums are so nearly out of the way that they are a matter of very small concern to all holders at this date. Prunes are still in evidence, but there is nearer a clean-up here and market is in better shape than in the East. There are some on the local market offering down to 2¢, which is about the cheapest prune here, while in Chicago 1900 stock is quoted down to 1¢. In futures not much has been done aside from a few sales of Apricots at 6¢. In sacks. Dealing in dried fruit futures is largely a gamble of speculative operators, growers as a rule refusing to take a hand in the game. While the market as a whole presents a very good tone, there is little at present upon which to base quotations for dried fruit of any sort.

## EVAPORATED OR BLEACHED.

Apricots, Royal, choice, in sacks, # lb.....	9 @ 10
Apricots, Moorpark.....	10 @ 12
Apples, in 50-lb boxes, rings, pressed, fancy.....	11 @ 11 1/2
Apples, 50-lb boxes, rings, pressed, good to choice.....	10 @ 10 1/2
Nectarines, # lb.....	5 @ 6
Peaches, unpeeled, choice.....	6 1/2 @ 7 1/2
Peaches, peeled, in boxes.....	12 @ 14
Plums, Red and Black, pitted.....	5 @ 6
Plums, White and Yellow.....	5 @ 6
Prunes, 4 sizes, in bags, 3¢ @ 3 1/2¢; 50-60s, 4 1/4¢ @ 4 1/2¢; 60-70s, 3 1/2¢ @ 3 3/4¢; 70-80s, 3 1/4¢ @ 3 1/2¢; 80-90s, 2 1/2¢ @ 2 3/4¢; 90-100s, 2 1/4¢ @ 2 1/2¢; these figures for 1901 crop.	

## COMMON SUN-DRIED.

Apples, sliced.....	6 @ 6 1/2
Apples, quartered.....	6 @—
Peaches, unpeeled.....	6 @ 6 1/2
Pears, prime halves.....	5 @ 5 1/2
Plums, unsplit, # lb.....	1 1/2 @ 2 1/2

## RAISINS.

Very little doing in this line. Stocks are light and packers and seeders have

virtually complete control of the situation for the time being.

Following are the prices for 1901 crop in carload lots:	
Loose Muscatels—	Per lb.
4-crown.....	5 1/2 @ 6
3-crown.....	5 1/2 @ 6
2-crown.....	— @—
Seedless Sultanias.....	— @—
Thompson's Seedless, bleached.....	9 @ 9 1/2
Seeded—	
1-lb. carton.....	7 1/2 @ 8
12-oz. carton.....	6 1/2 @ 6 1/2
London Layers, 20-lb. boxes—	
2-crown.....	— @—
3-crown.....	— @—

## CITRUS FRUITS.

The few choice Oranges on market are bringing comparatively high prices, with inquiry mainly on account of Eastern visitors. The general run of present offerings show common quality, and for such the market is weak. Lemons were in fair request, but supply was ample and only best qualities were specially sought after. Limes were in increased stock and unchanged in price.

Oranges—Navels, # box.....	1 50 @ 4 00
Mediterranean Sweet.....	1 00 @ 2 50
Valencias, # box.....	1 50 @ 3 75
Seedlings, # box.....	1 00 @ 2 50
Tangerine, quarter box.....	— @—
Lemons—California, select, # box.....	2 50 @ 2 75
California, good to choice.....	1 75 @ 2 25
California, common to fair.....	1 00 @ 1 50
Grape Fruit, # box.....	1 00 @ 2 50
Limes—Mexican, # box.....	4 00 @ 4 50

## NUTS.

Almonds and Walnuts are nearly cleaned up. Dealers are bidding 8¢ for new crop Almonds of the Hatch varieties and 6¢ for Languedocs. On new crop Walnuts no prices have yet been named.

California Almonds, shelled.....	16 @ 19
California Almonds, paper shell, # lb.....	12 @ 13
California Almonds, soft shell.....	9 @ 10
California Almonds, hard shell.....	5 @ 6
Cal. White Walnuts, No. 1 soft shell.....	12 @ 13
Cal. White Walnuts, No. 2 soft shell.....	10 @ 11
Cal. White Walnuts, No. 1 hard shell.....	10 @ 11
Cal. White Walnuts, No. 2 hard shell.....	7 @ 8
Peanuts, California, fair to prime.....	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.....	5 1/2 @ 6
Pine Nuts.....	5 @ 6

## WINE.

The wholesale market for wines is exceedingly quiet, there being scarcely anything doing in the way of transfers from first hands. Dry wines of last year's vintage remain quotable at 20¢ to 25¢ per gallon, but extreme figure quoted is more in accord with the views of holders than with prices obtainable at present in a regular way. Only favorite marks of new wine going to special custom can be depended on to bring 25¢ per gallon at present, although there are some lots of superior quality which are held for better values. There is, however, considerable wine, both red and white, of 1901 vintage, offering between range of 21¢ to 23¢, San Francisco delivery.

## Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	118,877	3,225,017
Wheat, centals.....	211,956	10,067,036
Barley, centals.....	41,160	6,256,314
Oats, centals.....	3,006	783,697
Corn, centals.....	8,060	141,176
Rye, centals.....	830	271,591
Beans, sacks.....	1,688	701,984
Potatoes, sacks.....	18,200	1,380,261
Onions, sacks.....	5,369	206,277
Hay, tons.....	2,398	140,055
Wool, bales.....	831	72,436
Hops, bales.....	64	9,097

## EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	6,532	4,158,662
Wheat, centals.....	183,422	9,313,861
Barley, centals.....	13,941	4,297,602
Oats, centals.....	89	3,950
Corn, centals.....	638	13,010
Beans, sacks.....	493	25,274
Hay, bales.....	1,405	23,439
Wool, pounds.....	1,241,854	1,284,291
Hops, pounds.....	1,087	556,682
Honey, cases.....	6,136	2,185
Potatoes, pack's.....	1,749	49,819

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NEW YORK, June 11.—Evaporated apples, com. mon, 7¢ @ 9¢; prime wire tray, 9 1/2¢ @ 10¢; choice-10 1/2¢ @ 10 1/2¢; fancy, 11¢ @—c. California Dried Fruits.—The prune market holds steady, active export demand continuing. Domestic business light, prices unchanged. Apricots are moving well in a jobbing way and are held with confidence. Peaches quiet but steady at unchanged prices. Prunes, 3 1/2¢ @ 6 1/2¢. Apricots, boxed, 10 1/2¢ @ 14¢; bags, 10 1/2¢ @ 12¢. Peaches, unpeeled, 8 1/2¢ @ 10 1/2¢; peeled, 13¢ @ 16¢.

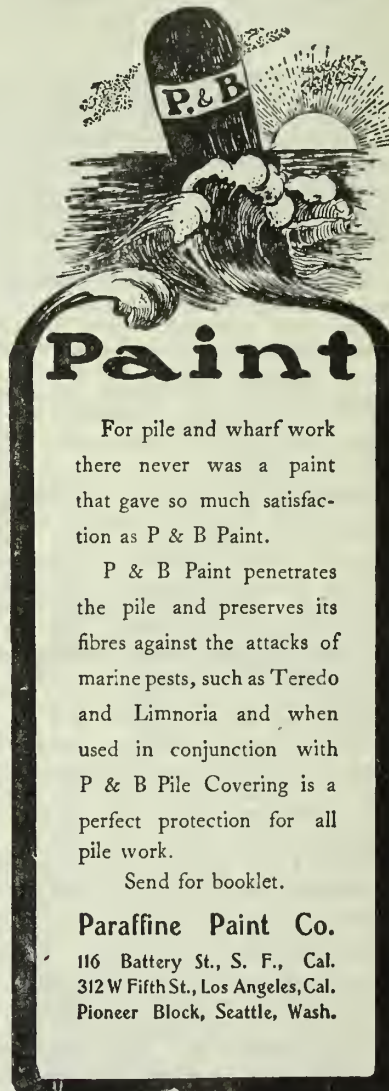
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## THE VETERINARIAN.

### Contagious Sore Eyes in Cattle.

There exists in this and other Western States a contagious inflammation of the eyes among cattle that is popularly called "pinkeye," from the red and inflamed appearance of the eye. The disease is quite widely distributed, and while it occurs at all seasons of the year it is most frequently observed during the summer months, while cattle are on pasture, as dust and pollen from plants increase the irritation of the eye. The disease was first observed by the writer in this State in 1890, but since that time has spread rapidly and is now quite common. The disease seems to attack young cattle more frequently than old cattle, but cattle of all ages will take it, and it seems to affect old cattle more severely than calves. It does not attack other animals than cattle.

**CAUSES.**—The cause of the disease has not been discovered, although it is believed to be due to a germ. The manner in which the disease is spread from one animal to another is little understood, although flies are believed to play an important part. The disease, however, also spreads during the winter, when there are no flies about. Direct contact seems to be a means of spreading the disease. There is a popular idea that pollen and dust cause the disease. They undoubtedly aggravate it, but the disease must be introduced into a locality by an infected animal.

**SYMPTOMS.**—The first symptom usually noticed is a profuse discharge of tears from one eye, that run down over the face. Dust and dirt often adhere to the moist hair and a dirty streak is observed, especially in white-faced cattle, extending from the inner corner of the eye downward across the face. The disease usually begins in one eye, and later attacks the other eye. In some cases both eyes may be attacked at the same time. Associated with a discharge of tears is a swelling of the eyelids, which are nearly closed, partly from the swelling, but principally to keep the light from the eye, as bright light seems to increase the pain. The front part of the eyeball becomes milky white in appearance and one spot, usually near the center, red or copper colored. At this point an abscess or small gathering usually forms and looks to be a reddish, fleshy mass. It breaks and discharges a small amount of pus or matter that escapes with the tears. As the animal recovers and the eye returns to its normal condition a white speck remains on the eyeball for a time as a scar, showing where the abscess existed. In a few cases this abscess weakens the front of the eye to such an extent that it bursts and allows the contents of the anterior chamber of the eye to escape. A few of the cases where the eye bursts will heal and the animal will recover the sight; but in a majority of the cases the animal will be permanently blind in that eye. A few cases are reported where both eyes have burst and the animal was permanently blind in both eyes. During the acute stages of the disease if both eyes are affected at the same time the inflammation may be so severe as to cause a temporary blindness, the animals being unable to see at all, and it is necessary to feed and water them to prevent them falling away rapidly in flesh. If the animal has the disease in

an acute form there is often some fever associated with the disease; and in practically all cases the cattle cease to ruminate and will stand about with ears lopped and eyes closed, exhibiting all symptoms of severe suffering. Milch cows usually fall away in the amount of milk secreted, or in severe cases it may be stopped entirely. Owing to a closing of the eyes, together with the pain, animals do not eat well, especially while at pasture, and as a result fall away in flesh.

Since practically no animals die from the effects of this disease, and only a few are permanently affected by the loss of sight, the greatest loss is in the shrinkage of flesh which follows an attack of this disease.

**TREATMENT.**—If possible, the disease should be prevented by keeping infected animals away from the healthy. After the disease is once introduced among a bunch of cattle, by separating and isolating the affected animals as soon as the first symptoms are shown the disease can be checked. It is not practicable to attempt to treat a large number of animals unless they should be especially valuable or suffer from the disease in a severe form. When it is advisable to treat an animal it should be placed in a darkened stable, the eyes thoroughly washed with cold water, all secretions removed and a solution of boric acid—twenty grains dissolved in an ounce water—should be applied. A few drops of Haarlem oil or a little ointment made by mixing one part of finely pulverized iodoform with twelve parts of fresh lard or vaseline can be applied directly to the eyeball by putting it on the inside of the eyelid and gently rubbing it over the surface. Cloths wet with cold water and kept over the eyes are useful in reducing the inflammation. Practically all animals make a good recovery in three or four weeks.—N. S. MAYO, Kansas Experiment Station, Manhattan.

### Mange in Cattle and Horses, and Lice on Hogs.

Dr. A. T. Peters, veterinarian of the Nebraska Experiment Station, sends us a copy of Bulletin 74, which treats on "Mange in Cattle and Horses, and Lice on Hogs." It gives the history of cattle mange in the State, with illustrations of affected cattle and the mite causing

the disease. The bulletin describes minutely the symptoms found in herds affected with mange, quoting also a number of authors who have observed animals affected in this country and in Europe. The treatment is described at length, giving the methods that were first used, when this disease did not extend over such a large area, which usually consisted of hand applications of disinfectants. It also describes some of the popular remedies that were used at that time, and gives the more modern way of treating the disease, namely, by the construction of dipping tanks and the use of various dips. The bulletin gives the results of dipping with coal tar preparations, which have been used with satisfactory results on over 7000 head of cattle that were badly affected with mange. Failures after thorough dipping are explained as being due either to the solution not having been sufficiently strong or to reinfestation after treatment. The bulletin also states some of the advantages to be derived from dipping. The author thinks that the liberal use of dips will materially aid in lessening the loss from abortion, believing that a large percentage of the abortions occurring among cattle on the range is due to a weakened condition resulting from mange. He believes also that a large percentage of the calves that die very young from what is commonly known as "calf cholera" do so owing to the fact that they are born weak and are therefore susceptible to disease. The bulletin gives descriptions of cattle and pig dipping tanks, together with plates showing construction; also illustrations showing the process of dipping, etc. The bulletin can be had by addressing Nebraska Experiment Station, Lincoln, Neb.

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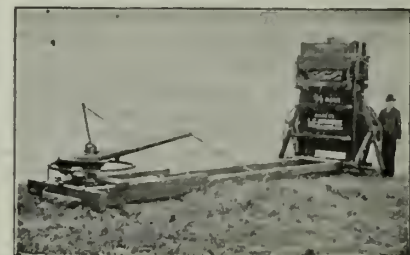
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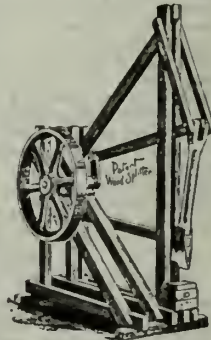
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## FRUIT MARKETING.

### How the New Combination Works.

According to reports of discussions among growers given in the Oakland Enquirer, the fruit buying arrangements for this season do not please the Alameda producers.

**APPREHENSIONS.**—The fruit growers of Alameda county are considerably stirred up, as they have reason to be, over the conditions in the fruit market, which they believe bode them no good. The outlook is considerably less encouraging than it was expected to be, because a few weeks ago it was generally conceded that not only was the prospect fair for an abundant crop, but the conditions in the East were such as to promise a ready sale and good prices for California fruit. Now the growers are convinced that the market is going to be far from satisfactory. Indeed, they have practical proof in the offers already made to them that prices are not going to be as remunerative as they could wish.

**CHERRIES.**—Among the first to be disappointed were the cherry growers of the San Leandro section. Their fruit comes into the market early and they know what they have to expect for the remainder of the season. Inasmuch as the crop of cherries, unlike that of some other fruits, is rather light, they were anticipating good prices, but they are not getting them. The buyers for the canneries have fixed the prices, which are generally 3 cents a pound for soft whites and black cherries and 6 cents for Royal Annes. In some cases, however, only 2½ cents a pound are paid for the cheaper varieties.

These prices are regarded by the producers as being altogether inadequate under the circumstances, because prices have been better in recent years when the crops were much larger than they are this season.

**CANNERS.**—But what has particularly startled and alarmed the growers, not only of cherries, but other fruits as well, is the discovery that this year the canneries are all in one combination so far as prices for the growers are concerned. Last year the situation was different, for then (although the larger part of the business was handled by the combination, generally known as the Cannery Trust) there were a number of independent or outside canneries which bid against the trust canneries for the fruit they wanted and thus aided in sustaining prices. This year the trust took time by the forelock, and in advance of the fruit season made a deal with the independent canneries by which practically all of them agreed to come into a pool which should regulate the prices of fruit. The scale of prices was agreed upon, and all the parties to the deal (both trust canneries and in-

dependents) agreed not to exceed these rates.

An effort was made to keep the fact of the pool's existence secret, and it was a good while before the truth came out, but now the canners make no particular effort to conceal the facts, since they seem to be indisputable.

The apricot growers are considerably disturbed, for the current report is that the canneries will purchase very few apricots outside of those for which they made advance contracts. In some cases the canneries have five-year contracts with producers, and these contracts cover so large an amount of apricots that, if the pack is going to be a small one, they have no need to buy much other fruit of this kind.

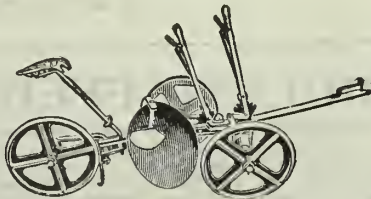
The probabilities are that the pack will be a small one, because it is said there is a carry-over stock amounting to 750,000 cases of last year's fruit, which was not sold. Some reports make the stock as much as a million cases.

On the part of the growers there is a good deal of excitement and not a little indignation. They believe that the canners have all joined hands to buy fruit far below the prices which they can afford to pay—that it is, in fact, a bold attempt to make fancy profits by forcing the growers to sell for a song.

**PRO AND CON.**—The other side of the story is told by men interested in the fruit trade rather than in the production of fruit. They say that the situation of the canners is not so agreeable as the fruit growers imagine it to be, and that their business is in no very good condition. The failure to sell out the pack of last year is one black spot on the horizon, but this is not all. It is said that the cannery trust, like most other trusts, is over-capitalized and that it needs to make large profits in order to pay interest and dividends. This, it is claimed, cannot be done without buying fruit at low prices and selling on the most favorable ones.

To this statement the orchardists are likely to reply that, while the showing on behalf of the canneries may be enlightening, it is hardly comforting because whatever happens to the cannery the fruit grower has a disagreeable certainty of being the under dog in the fight. If the canneries are fighting to make moderate profits on an immoderate amount of stock and bonds, the situation for the growers is just as bad as if the cause of the low prices was the determination of the canners to get rich in a single year.

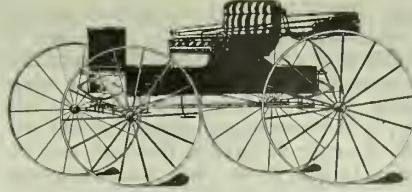
According to current report, the deal of the canneries relates only to the purchasing of fruit and does not cover sales of the product. When it comes to selling the fruit which is purchased at the pool prices, the trust and the independent canners scrap for business as of old.



The new Benicia-Hancock disc plow put out during the past season proved to be an unqualified success. In view of past failures on the part of Eastern manufacturers, the Benicia Agricultural Works may feel proud of their product. More were sold than anticipated, for the public had begun to think that the disc did not make a good plow. It is safe to assert that no disc plow can be a success unless made under the Hancock patents, which have just been sustained in an injunction suit brought against an imitator. Baker & Hamilton have established agencies over the greater part of several States. Write them at San Francisco, Cal., for particulars.

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N. B.—Use the same judgment when buying a vehicle that you exercise when selecting seed wheat or developing a mine.

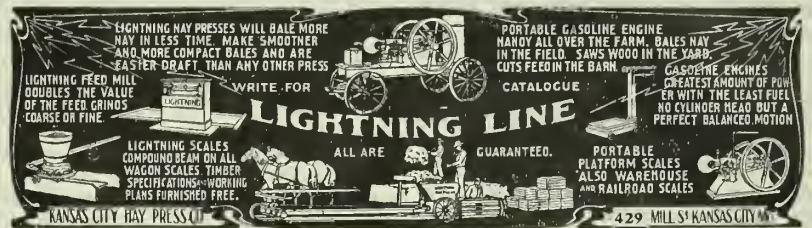


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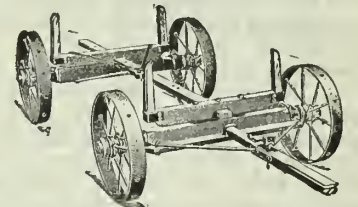
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Sole Agents, - No. 123 California Street,  
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## FRUIT PRESERVATION.

The Candied Fruit Product of Marseilles.

Consul-General Robert P. Skinner of Marseilles has prepared for the State Department a report which will be found of much interest to California fruit growers as follows:

A very interesting commercial specialty in Provence is that of preserving fruit in sugar, classified in French as "fruits confits," which is carried on here with greater success than anywhere else in the world. The exports of this article from Marseilles to the United States have amounted in value, since 1897, to the following sums:

1897.....	\$110,950
1898.....	95,104
1899.....	95,346
1900.....	110,796
1901.....	146,325
1902 (three quarters only).....	101,668

The most successful houses engaged in this business are located in the little town of Apt, in the center of a rich and protected corner of Provence, where many kinds of fruit and vegetables are grown and shipped to the Paris and Marseilles markets. The most prominent of the Apt manufacturers informs me that, although he has experimented repeatedly in the United States and elsewhere with fruits of various kinds, he has failed to secure satisfactory results anywhere except in Provence. This same gentleman has a branch house in New York, where certain supplementary operations are carried on for the American trade, and he is reasonably familiar with the fruits grown in California and Louisiana. He says that the fruits of the States mentioned, although attractive to the eye and agreeable to the taste in a fresh state, lack the consistency of the French fruits and thus cannot be subjected to the repeated boiling and scouring which are essential to the manufacture of a translucent and perfectly finished product. This is particularly true of the cherries, from which it is difficult, if not impossible, to extract the stones without a small portion of the cherries adhering. Even in France, the area wherein satisfactory fruit for this business may be grown is restricted to the neighborhood of Apt. Thus, for example, the apricots of Roquevaire, also in Provence, which are shipped in very large quantities in the form of pulp to the important British canning houses, can not be preserved in sugar, retaining their natural form, color, and flavor.

How THE FRUIT IS MADE.—The process of manufacture at Apt possesses no particular mystery, but is carried on with great patience, under the direction of men who have inherited generations of experience. All of the fruits intended for preservation in sugar, in the form of what are called "candied fruit" in the United States, upon arrival in the factories are placed in hermetically sealed chambers, upon shelves permitting of the free passage of sulphurous fumes. In this chamber about 500 grams of sulphur per 4000 kilograms (8800 pounds) of fruit are burned, and the chamber is kept closed for two hours. The effect of the sulphur is to brighten the fruit, give it a uniform transparency, and remove black spots and superficial imperfections. This operation terminated, the fruit is plunged into boiling water, maintained at a temperature of 100° C., in which it remains for from twenty to sixty min-

utes. This operation is known as the "bleaching process," the purpose of which is to remove the last remaining natural acid and render the fruit absolutely pure. After this thorough boiling, it is removed and placed in fresh water, in order to harden the flesh, and remains in this water, which is constantly renewed, for from twenty-four to forty-eight hours, according to the nature of the fruit.

The raw material is by this time entirely ready for the preserving process proper. It is first placed in boiling syrup daily for a period of about two months. There are ten different operations connected with this branch of the process, which results in the concentration of the syrup and guarantees the complete preservation of the fruit. The fruit is continued in syrup until the moment for packing and forwarding arrives, when it is removed, washed in water and finally crystallized—an operation which consists in again plunging the fruit into syrup with boiling sugar, where it remains for ten hours. With this final sugar bath, it is considered that the fruit can be delivered with entire security to the public.

It is well understood that the use of sulphur is of no importance in so far as the real merit of the finished product is concerned; but, on the other hand, there is no doubt that it renders it much more attractive to the eye. It will be interesting to American fruit growers to learn that, in the opinion of the French manufacturers, they have not yet produced an article susceptible of the same treatment given to the fruits of Provence, and they may perceive in the flourishing business which exists in Provence an incentive to provide the materials necessary for the establishment of a similar industry at home.

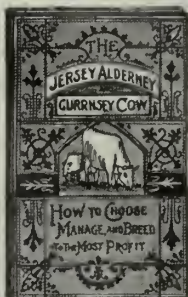
Because of the tariff levied upon crystallized fruit, Messrs. E. Reboulin fils, of Apt, perhaps the largest house in the business, have recently undertaken to forward fresh fruit in brine to New York, where it is subsequently treated as above described. The experiment gives every promise of success.

Marseilles, France, May 1, 1902.

### Hardiness of the Angoras.

C. P. Bailey & Sons of San Jose, in a letter to the Sheep Breeder, gave this interesting experience: Our buck, Pasha V, took first premium as a yearling at the late Kansas City show and was not offered for sale. We were offered \$500 for him, but preferred to send him to Nevada to breed. Being a stranger on the ranch, he got lost and was out in the hills all winter. We had given him up for dead, when one day an Indian who was passing the ranch house reported that he had seen a goat about 40 miles from the place. The foreman sent a man out with the Indian to see if it could be the long-lost buck. This young buck, together with another one, had lived in a wild country with the thermometer from 10° to 17° below zero and many coyotes and wolves in the country for four months. It is needless to say the Indian received his just reward. The buck was in fairly good condition, although he had lived exclusively on brush, and he sheared nine pounds of mohair for the year's growth.

### JERSEY, ALDERNEY and GUERNSEY COWS.



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**A. J. C. C. JERSEYS.** Service bulls of noted strains Joseph Mailliard, San Geronimo, Marin Co., Cal.

**9 SHORT-HORNED DURHAM BULLS FOR SALE.** Address E. S. Driver, Antelope, Cal.

**BULLS**—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

**PETER Saxe & Son, Lick House, S. F., Cal.** Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

**J. H. GLIDE, Sacramento, Cal.** Have 70 choice Durham Bulls for sale.

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### POULTRY.

**WELLINGTON'S IMPROVED EGG FOOD** for poultry. Every grocer and merchant keeps it.

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**MEAT MEAL.**—Best quality, lowest price. White Leghorn eggs. A. Warren Robinson, Napa, Cal.

**BRONZE TURKEYS.** Ed. Hart, Clements, Cal.

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**POLAND-CHINA PIGS.**—Write us for prices on sows and boar not related. Sweepstakes herd—State Fair. S. P. Lindgren & Sons, Kingsburg, Cal.

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**J. L. BOURLAND, Bishop, Inyo Co., Cal.** Breeder of choice Thoroughbred Duroc Hogs. Five sows of unrelated families. Breeding stock for sale.

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Intelligent Feeding of Poultry always returns a profit. Improper feeding does not. It costs no more to feed right than wrong. The nutritive ration must be balanced to meet specific requirements. Our booklet, "The Science of Poultry Feeding," tells you all about it. We will also send you, on request, our booklet "Poultry Fattening Perfected," which describes our new Poultry Cramping Machine and method of use; also trough feeding, and our special brand of Grenadier Meal; the only Perfect Feed on earth for this purpose sold under a specific guarantee. Write for them at once and get posted.  
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Large Number of Officially Tested Cows. Bull Calves from Great Producing Dams.  
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Breeders of all Leading Varieties of Fowls.  
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Send for Catalogue.

**WIRE Cattle Poultry Hog FENCE**

Strongest and best Field Fence on the market.  
**WEST COAST WIRE & IRON WORKS,**  
17-19 Fremont Street, San Francisco, Cal.





## FRUIT MARKETING.

### Co-operative Fruit Selling in San Francisco.

TO THE EDITOR:—I send you a copy of the Record-Union's recent article on "The Growers' Co-operative Agency," in its efforts to establish in San Francisco a central market for the sale, at fair profits, of the fruit growers' products. It is a matter of vital importance; and the new association, which has the cordial support of our California Fresh Fruit Exchange and also of the Southern California Fruit Exchange, has to contend with a strong combination of commission men, who raised their commission to 10% and would thus deprive the growers of a large amount of the profits which are justly due them. The good cause needs the strong aid that your influential paper can give it, and we hope that you will help us to make this just and beneficent movement a success. What you say will be widely read and have the effect of bracing up the hope and resolution of the growers. They have been bled long enough by those who have no interest in the growers' work save that of making all the money they can. Our Exchange has worked for fifteen months to secure the organization of the growers on the Sacramento river, on the co-operative basis. EDW. I. GALVIN, Pres. California Fresh Fruit Exchange. Sacramento, June 10.

The indictment which the Record-Union makes against the commission merchants of San Francisco contains the following charges:

The commission men of San Francisco are determined that the farmers and fruit growers shall not be permitted to sell their own products in San Francisco.

When the Growers' Co-Operative Agency of Sacramento Valley established its house in San Francisco some days ago, to enable fruit growers and farmers to market their own fruit and products, through their own salaried agents, it was supposed that if they observed the customs of the trade they would be permitted to do business in San Francisco without hindrance.

They speedily found that this was not to be the case, and from the day on which they first opened to sell goods to the present time they have been obstructed in every way possible by the commission houses, until now it is a clear case of a fight to the finish to determine the important question: May the farmers presume to do their own business in their own way in San Francisco?

If they fail, they must inevitably turn over their crops to firms that have no interest in them, except to take out an excessive brokerage for handling them. The agency has done a good business in spite of all obstacles. Everything sent to it has been sold, and at good prices, although some of the men who bought heavily from it at first have been obliged to give back the goods they had purchased, on threat of fine and boycott by the commission men. Other buyers, however, were found for these goods, and so business proceeded.

Every day is adding to the strength of this co-operative agency, and every day is adding to the strength of the forces concentrated against it.

From what can be learned of the men who are leading this present fight in San Francisco on behalf of the Sacramento river fruit growers, they are likely to stand with it until they bring it out triumphantly.

Several men have come forward and pledged each \$1000, if necessary, to carry on the fight, and other men have said that their entire crop for the year should be at the service of the agency to be used in any way necessary to secure success, even if not one cent of return were derived from it.

A promoter of this co-operative agency says: "If the movement obtains the support which it should receive from all parts of the State it will speedily achieve a very great success, and enable California farmers to secure the sale of their products in all coast markets at very low cost, and with absolutely honest returns."

"The outrageous fraud and trickery which have characterized so much of the San Francisco commission business

is something almost everywhere well known and admitted. It has even been brazenly defended by some of the commission men on the theory that only in that way could the business be supported. This does not seem so far wrong, either, when it is remembered that there are more commission houses for the sale of perishable products in San Francisco than in all Chicago, and twenty times as many as are in any way necessary to the efficient transaction of the business.

"This present struggle is fundamentally vital to the farmers, and they must not yield an inch, but stand squarely for their right to do their business in their own way, without dictation or hindrance from any set of middlemen."

Large quantities of fruits and vegetables are sent to San Francisco by boat every day, the same being handled by the co-operative agency. Able men are in charge of the business, and success is confidently expected.

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven Catarrh to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O. Sold by Druggists, 75c. Hall's Family Pills are the best.

### Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

RIDGING PLOWS.—No. 699,826. May 13, 1902. J. C. Silveira, San Francisco, Cal. This invention is an improvement on that class of plows which are designed to throw up a ridge or hill while moving over the ground. It is intended especially for the cultivation of asparagus and that class of garden truck which is thus ridged or hilled up. It consists essentially of a plow having an extended land side, means by which the latter may be held in the line said share and the land side to provide a rigid structure, and a moldboard pivotally secured to the share and capable of being inclined either vertically or horizontally so as to vary the height of the ridge or hill turned up, or to increase or decrease the width of the furrow. The inclination of the pole with relation to the plow frame may be regulated by pivoting the pole intermediate to its ends.

PUMPING APPARATUS.—No. 699,829. May 13, 1902. J. Albrechtszki, San Francisco, Cal. The object of this invention is to provide a means for pumping water and the like by the action of flowing water upon a journaled wheel, and in conjunction therewith of a windwheel with intermediate gearing, so that the two may act together or separately as desired. Fulcrumed levers have their upper ends connected with eccentrics driven by the wheel and links by which the intermediate portions of the levers are connected with the plunger rods of the pump cylinders. The water from these cylinders is conducted into a common discharge main through which it may be delivered to any desired point.

BICYCLE BRAKE.—No. 700,350. May 20, 1902. A. Maln, Powellton, Cal. In this brake for bicycles a rim independent of and interior to the felly of the wheel is secured and the brake shoe operates against this rim, engaging the latter at about right angles with the axis of the machine. The brake shoe is operated by a system of bell crank and hand levers with intermediate connecting rods, so that it may be pressed against the supplemental rim with any desired power, and thus check or stop the machine.

BED BOTTOMS.—No. 700,929. May 27, 1902. John Hoey, San Francisco. This invention relates to improvements in bed bottoms of that class in which a woven wire or equivalent support for the upper mattress is attached to a frame work, which is in turn supported upon a bedstead. It consists of a frame having side and end bars, the latter projecting over or beyond the side rails of the bedstead, and supporting blocks rest upon the bedstead rails, these blocks having their outer ends flush with those of the end bars. The side bars are bolted through the end bars, and these blocks, and the woven wire fabric stretched longitudinally over the end bars and unconnected with the side bars, has its edges flush with the end bars and overhanging the bedstead rails. Elastic cables extend in pairs between the ends of the frame and links, and draw the members of each pair toward each other, the members of adjacent pairs overlapping and crossing to form supplemental supports.

BRAKE AND BELL FOR VEHICLE.—No. 700,349. May 20, 1902. S. H. Madsen, Haywards, Cal. This invention is designed to provide a combined brake and bell mechanism to be applied to vehicles and especially to bicycles. The brake consists of a roller journaled between forks, which fork is supported upon a plate on clamps secured to the head of the bicycle. The roller comprises a central elastic core and an elastic sleeve surrounding it with metal bands upon the ends, and the elastic sleeve is provided with a spiral wrapping of cords to reduce the wear. A pressure plate has shoes adapted to press upon the metal end bands of the roll while a central cord-wound portion presses upon the tire. A spring acts to normally hold the shoes out of contact with the roller and a guided


rod connects the plate with the brake lever so that the device may be operated. A bell is so located with relation to the brake roller that when the latter is brought into contact with the wheel tire or rim the revolution of the roller actuates the hammer of the bell and thus gives the warning.

### New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR WEEK ENDING MAY 27, 1902.

- 701,242.—PROPELLER—J. Aegerter, S. F.  
701,124.—SYRINGE—C. F. Allen, Hueneme, Cal.  
700,720.—REFRIGERATOR CASE—W. H. Ames, Watsonville, Cal.  
700,721.—REFRIGERATOR CASE—W. H. Ames, Watsonville, Cal.  
701,009.—LIFE BOAT LAUNCHING DEVICE—J. W. Bedford, S. F.  
700,889.—REFINING ASPHALTUM—A. F. L. Bell, Carpinteria, Cal.  
701,253.—BATTERY—G. S. Bennett, S. F.  
700,890.—CAN SOLDERING MACHINE—H. C. Black, Oakland, Cal.  
700,891.—CAN TESTING MACHINE—H. C. Black, Oakland, Cal.  
700,724.—SWAGE BLOCK—B. F. Blood, Forest Grove, Or.  
700,725.—FOOD CUTTER—J. A. Bone, Mayger, Or.  
700,734.—BURIAL VAULT—A. B. Buren, Salem, Or.  
701,149.—PICTURE HANGER—G. H. Chance, Portland, Or.  
701,151.—MUFFLER—C. E. Christman, San Jose, Cal.  
701,154.—NECKTIE FRAME—A. Cole, Hood River, Or.  
700,730.—PEANUT ROASTER—W. P. Crane, S. F.  
701,177.—OIL BURNER—E. W. Dunn, San Jose, Cal.  
700,921.—SUSPENDERS—H. T. Hazard, Los Angeles, Cal.  
700,928.—TRAIN ORDER BOX—I. C. Hoag, Los Angeles, Cal.  
700,929.—BED BOTTOM—J. Hoey, S. F.  
701,207.—CAR—R. A. Ludlow, Hanford, Cal.  
700,970.—SPED GEAR—J. D. McFarland, Jr., S. F.  
701,071.—MARKING MACHINE—R. N. Moody, Aberdeen, Wash.  
700,799.—UNLOADING SHIPS—A. Mullen, S. F.  
700,841.—BICYCLE PUMP—E. F. Smith, Stockton, Cal.  
701,098.—CHEESE CUTTER—W. J. Spillman, Pullman, Wash.  
701,232.—DRAWER GUARD—Martha O. Teel, The Dalles, Or.  
700,867.—LOOSE LEAF HOLDER—R. G. Whitlock, Los Angeles, Cal.  
701,239.—WORKING ORES—F. D. Wood, S. F.  
701,121.—POULTRY FEEDER—Z. Xevers, Santa Cruz, Cal.  
701,241.—HEATER—J. N. Young, Alameda, Cal.



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large quantities of  
**Potash.**  
The fertilizer applied, must furnish enough Potash, or the land will lose its producing power.  
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## THE NEW EGG FARM.

By H. H. STODDARD.

A practical, reliable manual upon producing eggs and poultry for market as a profitable business enterprise, either by itself or connected with other branches of agriculture. It tells all about how to feed and manage, how to breed and select incubators and brooders, its labor-saving devices etc. 12mo., 331 pp., 140 original illustrations cloth. Price, \$1 postpaid.

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# California Fruits.

NEW EDITION (3rd). LARGELY REWRITTEN.

By PROF. E. J. WICKSON.

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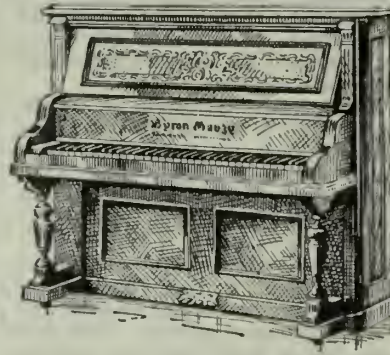
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# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 25.

SAN FRANCISCO, SATURDAY, JUNE 21, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

### California Field-Grown Rose Bushes.

It is rather an old idea that the fine, strong field-grown rose bushes of California are a better start for the rose planter than the small and tender forced plants of the Eastern propagators. Years of experience have justified this conclusion, and the awards at Eastern expositions to California propagators are merely public expressions of the same fact. Though this is true, it has not been altogether easy to realize what seemed at first a very simple matter, and to grow roses economically by the hundreds of thousands of all popular varieties has been attended by some difficulties, which have happily been surmounted. The experience of the Chase Nursery Co. of Riverside shows how the business has been developed until success has been attained. About seven years ago this company began experiments by planting some thousands of hard-wood cuttings in the open ground, and the results were very unsatisfactory. Certain sorts gave good stands, while others were complete failures. By this time the company had become thoroughly interested in the work, and, in order to carry it on as it should be done, hired a professed "rose propagator," who promised to grow roses by the million. He established a cold frame or two and built an extensive lath house and scored a complete failure. Later, with another "propagator," the plant was again increased and the output reduced.

Notwithstanding all the expensive experiments, and what were called failures, a large quantity of rose bushes were produced, and of such a quality as to gradually overcome the prejudice that existed among Eastern buyers against California-grown roses. During this period several attempts to grow roses in large quantities in southern California were made by Eastern growers unacquainted with the climatic conditions which resulted even more unsatisfactorily.

In 1899, convinced that there was a large business to be developed, the Chase Co. sent Chas. W. Howard East to learn something about the propagation of roses. He had been in the line of olive propaga-



Rose Propagating Plant of Chase Rose Company of Riverside.

tion for several years and was thoroughly conversant with our Western climate. On his return, after a number of months there, the propagating plant was torn

down and completely remodeled. In 1901 the Chase Nursery Co. organized the Chase Rose Co. with a capital stock of \$25,000 and commenced building the propagating plant shown in one of the engravings on this page. Their output last year from the houses was over 300,000, which are now growing in nursery rows in the field, as shown in the large engraving. A twenty-acre block is producing probably more tons of rose petals during the summer than some acres produce hay. Boys are kept almost constantly busy cutting off the flowers as they develop. This year



A Bunch of Brides in the Rose Fields at Riverside, Cal.

the company has increased its propagating plant and expects to turn out fully 600,000—just twice last year's output. They now have hot-bed frames for nearly 300 sashes and five large modern greenhouses with a first-class hot-water heating system using crude oil for fuel.

Up to the present time the sales have been largely in the East, selling from cold storage in St. Louis, Rochester and Philadelphia. Next spring's delivery will also go largely to the East, but attention is also being paid to the Pacific coast market.

The roses are all grown on own roots—the only satisfactory rose for the people, because, where budded bushes are planted, in many cases the planters' efforts are wasted caring for the worthless wild rose used for stock, which often sprouts, and, being a strong grower, outgrows the bud before the amateur grower is aware.

Nowhere in the world do roses do so well over so large a territory as from San Diego to the British line, and to supply this trade alone will require the output of many large rose nurseries. The experience of the Chase people is simply an exemplification of the truth that "keeping everlastingly at it" brings success. Rose growing on a large scale needs a large experience and plenty of capital, and the wise pursuit of it will add much to the horticultural income of California.



Field-Grown Kaiserin Augusta Victoria.



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E. J. WICKSON. Horticultural Editor

San Francisco, June 21, 1902.

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## The Week.

The grasshopper problems have been the most engrossing rural topics of the week. Not only have they excited and alarmed the residents near the foothills, both in the interior valley and in the southern coast region, but ranch owners resident in cities and towns have been rushing about frantically to secure advice as to what to do with the pests. The demand for copies of the PACIFIC RURAL PRESS of June 7th has been sharp and the successful methods of hopper destruction therein described have been the basis of the most effective fighting everywhere. It looks now as though the firm stand taken by the people against invasion and the ways employed to repel it would reduce the injury to a minimum.

One of the most interesting questions which have arisen in connection with stamping out the hoppers on the rough pasture lands where they breed in largest numbers is where rests the power to order the burning of these lands against the will of their owners. It is reported as we go to press on Wednesday that the Supervisors of Sacramento county have ordered the pasture land on which the pests are nesting burned and have sent out deputy sheriffs to see that their orders are obeyed. There were threats on the part of some owners of pasture land to shoot any one who dared to fire their lands, but it seems now that the objectors will content themselves with protesting so that they can sue for damages. The counties of Placer and El Dorado do not appear to have such daring Supervisors and menaced growers of fruits and other crops have appealed to the State authorities. The Attorney-General states that no power inheres in the State Board of Horticulture or in other organization to burn nesting places, but that if the threatened calamity is imminent and far-reaching, affecting several counties, and if there is no other remedy than the burning over of pasture lands, then the State has the right to exercise this power, but the power rests in the Governor alone. As we go to press it is expected that the Governor will authorize what burning is necessary.

It should be remembered, however, that the burning proposed will only help adjacent valley sections. The hoppers which are now appearing in such widely distant places are hatching in the several districts and must be locally treated. Wherever local examination shows the young hoppers on land which can be burned, the match should be applied after safeguards against the running of the fire. But after all possible application of this method of cutting off the insects, there will be the need of fighting the pests in field, orchard, vineyard and garden, and to this end we urge all readers to turn again to page 374 of our

issue of June 7 and prepare for effective work. Get ready for whatever ways suit best your conditions, and apply them vigorously as soon as the pests approach. If this is done, the general injury will probably not be great. The hoppers are attended by their natural enemies in large numbers, and prompt and sharp work by man will save the day.

Wheat is firmer though spot prices are unchanged, and there is not much doing. Three cargoes have gone out—two to Europe and one for South Africa, and 10,000 barrels of flour for Australia and New Zealand. The speculative market in wheat is about 2½ cents higher. Barley is unchanged and fairly steady. Oats are lower and unsettled; holders appear to be trying to unload. Corn is unchanged and held above buyers. Rye is rather weak. White beans are firmer, as there is some inquiry for export; Bayos are stronger and Blackeyes are scarce and high. Bran is unchanged, but stocks are heavier and the market is not firm. Middlings are scarce. Hay is about the same; little new arriving and little wanted, while choice old hay is moderately firm. Beef and mutton are easier, with a light summer demand; hogs are a little higher with a good prospect. Butter is dragging; the supply is a little to use and the price too high to pack, and eggs are in about the same condition. Cheese is steadily held, but slow, and some is going into storage. Poultry is weak though Eastern arrivals are light. There has been a carry-over from the previous week to dispose of, as the Shriners did not eat as much chicken as expected. New potatoes are arriving freely and are mostly of common grade, which sell slowly, while the best sell well. Onions are fairly steady and receipts moderate. Green peas are running short and canners cutting down their orders. Fruits are in ample and varied supply. Melons and grapes are in from India—ahead of Arizona shipments this year. Lemons are in lighter supply and higher. The dried fruit market is about bare and there is a good deal of speculative dickering between brokers and buyers. Eastern buyers are scared by the reports of large fruit crops. New hops are reported under contract for 13½ cents. Wool is firm and not much is doing here. To-day the sales are being held in Ukiah and high prices are expected.

The "Society of American Florists and Ornamental Horticulturists" is the leading national society along the lines of trade indicated in the title. The term "ornamental horticulturist" is not altogether happy; we have a number in the State and they never succeed in doing anything. The Eastern use of the words, however, means those interested in the culture of ornamental plants as contrasted with plants which are to be eaten, and the interest which such persons represent is vast and constantly increasing. This national society will meet this year in August in Asheville, South Carolina, and our California vice-president, Mr. H. H. Lilienthal of Oakland, will attend with the idea of securing the next annual meeting for some point in California. If this arrangement can be made, it will be to the advantage of the State, as the society includes in its membership most of the leading florists and seedsmen of the country. It is distinctively a trade organization, and the large seed and floral establishments of the coast would be distinctly benefited by such a meeting. Besides this, it will be of much value to all to have California more prominently in the minds of these people, who deal in beauty as a commercial commodity and are sharp judges of what will please people. We hope Mr. Lilienthal will succeed in getting much help in his effort to bring this promising national society to California.

The announcement is made that this year's dairy school at the University will open October 7 and close December 18. The course embraces the chemistry of soils, forage plants, milk and its products, bacteriology, butter and cheese, feeding, breeds, veterinary science, and kindred subjects. The course is open to all citizens of the State over seventeen years of age, and is free except incidental expenses. Further particulars can be had by addressing the University at Berkeley. Applications must be made by August 15. Only thirty-six can be accommodated, and action on the part of those interested should not be too long postponed. We may allude to the subject more in detail in an early issue.

## QUERIES AND REPLIES.

### Suitable Buds for Budding.

TO THE EDITOR:—I have your book, "California Fruits," in chapter IX of which you say in regard to buds: "Suckers and so-called 'water sprouts' should not be used, but rather well-formed wood from the branches of the tree."

A healthy almond orchard near me has been somewhat neglected for several years. Last winter it was thoroughly pruned and now has a fair crop of nuts, and lots of strong, new growth from near the ground to the very top. I presume much of this new growth might be called "water sprouts" or "suckers," and yet there would have been very much less new growth except for the severe pruning of last winter. Many of these shoots, especially on the lower part of the trees, are quite large, and ought to have matured buds—especially if the ends are once pinched off. Will it be safe to use these new lower shoots or branches, or had we better use the new growth of shoots or branches found higher up on the tree?

How can an amateur tell when buds are sufficiently "matured" on "well-formed wood" to ensure success in budding? Is there danger early in the season of buds getting too old to use, if the trees to be budded are in good condition?—GROWER, Los Angeles county.

There is some difference of opinion as to the desirability of buds taken from suckers, and in the orange districts the point is in hot controversy. Some favor sucker buds, some denounce them with all the force they possess. The balance of opinion is strongly against buds from suckers or water sprouts. The growth of such shoots is soft and sappy and the buds are less apt to be strong and well matured. They may attain such character after the wood has gained greater age, but the first buds that form in the axils of the leaves of a sucker are inferior. The shoots of the cut-back almond tree which you mention are hardly to be regarded as suckers. They are, rather, vigorous young wood forced out, as you say, by the reduction of the top of the tree. If the buds are on medium-sized wood and well plumped out, they are suitable for budding. Such buds are sufficiently matured when they are well formed, plump and full—the bud scales still closed and no new growth started. When the bud scales begin to open the growth of the lateral commences, and such buds are not suitable unless the stock is very full of sap, the air rather moist and all conditions favorable for maintaining life in the bud until it partakes of the sap of the stock. If shoots are pinched back for the purpose of hurrying the formation of buds, care must be had that these buds do not start into growth as laterals. They will do this very quickly after the shoot is pinched in the early part of the growing season. So long as growth does not start in the bud, the latter can hardly be said to be too old for budding. Shoots of mature size will make better buds by pinching than excessively large shoots. Excessively large and sappy shoots partake of the character of the sucker first mentioned.

### Root Knots and Their Treatment.

TO THE EDITOR:—Last spring I ordered 2000 dormant budded Muir and Elberta peach trees. When I received the trees there were at least 500 affected with root knot. I picked out and threw away every one that had the least suggestion of a knot on the roots. Then I planted the healthy looking ones. Yesterday I dug up fourteen of them and found five or six affected with the knot. Is this root knot contagious? How does the contagion spread if it is so? By contact or through the soil? What effect does this knot have on the trees, and would it shorten their lives any appreciable length of time? Does it affect the bearing of the tree? Would you advise me to dig up my orchard now while it is young? If I allowed the trees to grow as long as they would, would not the ground become impregnated with the disease so that if any other trees were planted they, too, would be diseased the same way? What causes this disease to appear?—ORCHARDIST, Fresno county.

The root knot has been demonstrated to be contagious, but how the contagion spreads and why trees are so apparently healthy at planting become badly knotted in a single year is not known. It is probable that such trees must have been contaminated before planting. It is unlikely that the germs would spread through the soil so rapidly, but they may be readily carried by cultivator tooth or plow point from one tree to another. Diseased bark dislodged from one tree by cultivation may be carried to another by the flow of irrigation water; in fact, there are many ways by which the communication may be made. The knots are ruinous to trees when



they get the upper hand, but it has been shown that quite old and productive trees may carry a certain amount of root knots without sensibly diminishing their productiveness or value. In the case of young trees if the growth is very small and the knot very large it is better to put in a new tree. If, however, on examination knots are found and still the growth of the young tree is satisfactory, the knot should be removed and the wound treated with Bordeaux mixture. Trees should be examined at stated intervals at least once a year to see that the knots do not form around the root crown. It is not worth while to pursue the examination to the distant roots, but when knots collect in masses around the root crown the sap flow is interrupted and no satisfactory growth is secured.

In the case of a young orchard the rational treatment seems to be as indicated above; destroy trees which are seriously affected and make an attempt to save the others. The percentage of affected trees shown by your experiments is pretty large, but still probably a good part of the trees would respond to proper treatment.

#### A Case of Mal-Nutrition.

TO THE EDITOR:—I send you some apricot limbs that I cut off some trees that are diseased, but I have not as yet been able to tell what is the matter with them; I send them to you, hoping you will tell me what disease they have and a remedy for it. The trees are on high, sandy loam ground, and the hardpan about 8 feet from the surface. Some of the trees are healthy, and yet the next one will be diseased; so it does not seem that they have not had water enough, or that the soil is bad, or all would suffer alike.—FRUIT GROWER, Fresno.

The specimens show that the trees are suffering from mal-nutrition. There does not seem to be specific disease present in sufficient quantity to cause the trouble. Last year's growth which has died back shows that similar lack of force in the plant existed before the present season. There is on the fruit which you sent a few indications of shothole fungus, but this is not enough to account for the condition of the twigs. The mal-nutrition which is at the foundation of your trouble might arise from a number of causes. It might be due to lack of moisture in the particular space where these trees stand, because it is a fact that we often find a difference between adjoining trees, caused by unfavorable soil condition in that immediate spot. Sometimes it may be the rise of a hardpan too near the surface; sometimes to the occurrence of sand or gravel which will not retain enough moisture; sometimes it is due to a conformation of the sub-soil, which holds too much water in connection with the roots; sometimes it is occasioned by the growth of root knots, which perforate the sap flow; sometimes the tree loses a good part of its roots by gophers, and sometimes there is a rise of alkali in the particular spot. Any one of these unfavorable conditions, and others not enumerated, might occasion the failure of individual trees. No one can tell from a few specimens what is the real cause of the trouble. It is probably located underground and works evil to the roots, and the top fails because not properly sustained by a healthy root system. You should make investigations by digging to ascertain whether any of these unfavorable conditions are present.

#### Wilt Disease of the Melon.

TO THE EDITOR:—There is some kind of a blight on my melon vines and it is going to destroy the whole of them unless I can find some remedy. I have tried every thing I could hear of, so I thought I would write to you to see if you could tell me what to do to save them. I have 2000 hills and it would be a very heavy loss to me. I have sulphured them very heavily, but it does no good. The large leaves turn brown, then the whole vine wilts in one night and is dead in the morning.—GROWER, San Luis Obispo county.

Your melons are affected with what is commonly called "wilt disease." It is caused by bacteria in the soil, which invade the vine and come so quickly that the vine or part of it wilts or collapses suddenly, as you describe. No application whatever to the exterior of the vine will have any effect, because the disease is in the interior tissues. All that you can do with the affected plant is to dig it up and burn it lest its presence may increase the bacteria and communicate the disease to other plants. The disease is also carried from plant to plant by insects which carry germs upon their mouth parts. Treat-

ment which destroys insects, therefore, indirectly lessens the amount of the disease. The best recourse is to practice rotation and not to grow melons, cucumbers, squashes, etc., on the same land two years in succession. It is probable that if you remove all the affected vines as soon as you see them the disease will not attack all the plants. It is very seldom that a whole plantation is affected at the same time.

#### Eucalyptus Oil.

TO THE EDITOR:—Is eucalyptus oil manufactured for commercial purposes on this coast, and can you put me in a way of learning something of the process?—SUBSCRIBER, Ventura county.

Eucalyptus oil is manufactured in the eucalyptus forests around the bay of San Francisco, but as these forests do not disappear it is fair to infer that the demand for the oil is quite readily supplied and that no great volume is required. It is used for medications and for the manufacture of an anti-incrustation material for steam boilers. The process of oil making is simple. The apparatus consists of a boiler for generation of steam; a steam-tight vat or chest, in which the fresh leaves and twigs are packed; a "worm" for the condensation of the steam after it has passed through the leaves in the chest, and a receptacle to catch the oil and water which flow from the "worm." Economy of time and steam is served by having two chests connected with each boiler, so that the steam may be turned to one while the other is being emptied and recharged. So far as we know, as intimated above, there is no demand which warrants enlistment in this production beyond that which is now undertaken.

#### Natural Markings, Not Scales.

TO THE EDITOR:—Kindly inform me what scale is on the enclosed piece of a limb from a Belleflower apple tree. I have three trees in my orchard that are dying apparently from the effect of the scale. What spray would you recommend to use on the rest of my orchard, which no doubt is affected more or less, although I have not found the scale except on three or four trees, nine years old, almost in the center of a fifteen-acre orchard.—APPLE GROWER, Watsonville.

We do not find any scale insects on the apple twig which you send. The spots on the bark are natural markings, or lenticels, as they are technically termed, and are not scale insects. Even if all these little marks were scale insects they would not appreciably affect the vigor of the tree because a tree does not manifest injury unless the number of scale present are vastly greater than the number of these spots present on your twigs. You will have to seek farther for the cause of weakness in some of your trees. There is probably something the matter with the roots, which perhaps you can ascertain by digging to examine them.

#### Non-Opening Rose Buds.

TO THE EDITOR:—I send you a sample of rose leaves and buds. They seem to be affected by some kind of disease. Upon examining them you will notice that the buds break off before they open, and this is the case with the whole bush, which is loaded down with buds. Please inform me what to do to check this.—E. C. VIERRA, Monterey county.

We have had some experience with this behavior, and believe it is due to the natural weakness of the variety under certain conditions. No disease is present. With us it is worst during low temperatures and excessive moisture in the air. Some varieties which are thus affected in the spring open well in the fall when there is drier air and higher heat. The best thing to do is to reject varieties which behave that way and multiply those which open well.

#### Pear Slug not Pear Blight.

TO THE EDITOR:—This morning while out looking over the pear trees I noticed the leaves drying and upon examining them I found an insect sucking the life out of them. I picked a few off and enclose to you for investigation. The bloom has been cut off for some time. May not that be the cause of the blight in the pear?—READER, Tulare City.

The insect which was at that time injuring your pear leaves is known as the pear slug. It is not in any way connected with the pear blight, but the tree may be affected with both evils at the same time. The remedy for the pear slug is to spray the foliage with Paris green, one pound to 200 gallons of water, just as is done to protect the fruit against codlin moth.

#### Moths in a Moth Trap.

TO THE EDITOR:—I enclose you some moths caught with the moth catcher. Will you kindly tell me the name of them and their habits?—FRANK WILKINSON, Arroyo Grande.

Your package of insects included five codlin moths, three crane flies and half a dozen other insects of no economic importance.

## WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 16, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

#### SACRAMENTO VALLEY.

Weather conditions have been nearly normal during the week and crops have advanced steadily. Grain is maturing rapidly. Harvesting is progressing in some sections and the yield is reported heavy. Grasshoppers have caused but little damage thus far, and it is stated that most of the grain is too far advanced to be seriously injured. Farmers are fighting the pest by burning pasture lands and spraying trees and vines. The hay crop is unusually heavy and the quality excellent. Deciduous fruits continue in good condition and are ripening rapidly. Vineyards are thrifty and give indications of a large crop. It is reported that several acres of grape vines in Sacramento county have been ruined by grasshoppers. Citrus fruits are doing well.

#### COAST AND BAY SECTIONS.

Continued warm weather during the week has been favorable for all crops. Grain and fruit have developed rapidly and hops, beets, corn and vegetables have made good growth. Early sown grain is ready for harvest in some of the northern districts and prospects are good for a heavy crop. The hay crop is above the average in yield and quality in the central and northern districts and fair in the south. It is estimated that the yield of hops in Sonoma county will be the heaviest ever harvested. There are no reports of the grasshopper pest in the coast and bay counties. Deciduous fruits are in excellent condition and more than average crops of most varieties are expected. Cherries and other small fruits are being gathered as rapidly as possible, and the canneries are in full operation. Farmers, orchardists and canners in Alameda county are unable to secure sufficient labor to properly handle the heavy crops. Citrus fruits are thrifty.

#### SAN JOAQUIN VALLEY.

The weather was very warm during the first of the week, but became cooler toward the close. Grain and fruit matured rapidly and other crops made good growth. Grain harvest is progressing rapidly in many places. Early sown barley is yielding a good crop, excellent in quality, but the late sown is somewhat shrunken. Wheat harvest has commenced in Stanislaus county. The second crop of alfalfa is of good quality and the yield about average. Some of the grain in Tulare and other southern counties is being cut for hay or used for pasturage. Grasshoppers are damaging grain in many places, but have not yet attacked the fruit districts to any great extent. All fruits except pears are in excellent condition, and good crops are expected. Grapes are very thrifty.

#### SOUTHERN CALIFORNIA.

The weather has been unusually cool, with considerable cloudiness and heavy fogs. A thunder storm occurred Monday night, accompanied by hail and light rain in some places, causing slight damage to fruit. Grain harvest is progressing in some sections and the yield is reported good. Hay is yielding a fair crop. Potatoes will be of good quality, but the yield rather small. Pasturage is becoming scarce in many places. Walnuts are making good progress. Deciduous fruits, with the exception of apricots, will be nearly up to average. Citrus fruits and grapes are in excellent condition. The berry crop is good. Water for irrigation is becoming very scarce.

LOS ANGELES SUMMARY.—Thunder showers on the 10th and 11th, with hail in places; no damage reported. Orchards are in good condition. Hay is all cut in the Ontario section; good crop.

EUREKA SUMMARY.—The warm weather is beneficial to crops. Some oats heading short. Vegetables are backward, but in fine growing condition. Strawberries are plentiful and of excellent quality. The fruit prospect was never better.

#### Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 18, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	.00	51.88	47.58	43.19	58	44
Red Bluff.....	.00	31.75	24.64	24.62	96	58
Sacramento.....	.00	17.95	20.21	23.45	88	52
San Francisco.....	.00	18.98	21.17	24.83	72	48
Fresno.....	.00	6.85	11.33	13.16	102	56
Independence.....	.00	4.34	6.17	5.55	92	62
San Luis Obispo.....	.00	21.95	31.14	17.46	78	44
Los Angeles.....	.00	10.57	16.29	17.52	74	54
San Diego.....	.00	6.16	11.45	7.64	66	58
Yuma.....	.00	.68	3.80	2.89	104	64



## THE POULTRY YARD.

### Points on Poultry Feeding.

By C. NISSON at the last meeting of the Petaluma Poultry Keepers' Protective Association.

Before proceeding, I wish to state that we are indebted to Prof. M. E. Jaffa of Berkeley for some of the charts which I shall use. The professor takes a deep interest in poultry matters. Some years ago he began some digestion experiments with poultry, but had to discontinue them, much to his regret. He hopes, however, soon to resume on a larger scale. I hope so, too; it is needed. It is not enough to know the chemical composition of feedstuffs; we must also know what per cent is digested, and in the case of poultry we do not know this.

**A BALANCED RATION.**—We hear much about a balanced ration. What does it mean?

Some one has said it means to the animal much the same that a square meal means to man, and that is not a bad illustration.

We would not consider a meal of potatoes, even with butter, a square meal; neither a meal of beef alone without potatoes or their equivalent, but the two or three together would be a square meal, and, like a balanced ration, it contains all the food elements necessary to sustain life and in about the right proportion.

**THE CHEMICAL COMPOSITION OF FEEDSTUFF.**—We all know from experience that we obtain different results from different foods, but we do not always know why.

Here it is that the agricultural chemist has come to our assistance, and it is much due to him that we are able to feed intelligently and know beforehand what results we may reasonably expect. Yet we do not avail ourselves of this knowledge as much as we ought to. This is due to a great extent to the common idea that we cannot understand their technical terms and cannot remember them.

As a matter of fact there are but very few terms that we need to know the meaning of thoroughly, and these few any one can learn if he tries.

At the risk of being tiresome to some of you, I will try to go over the ground as carefully as my limited time will allow.

We feed in order to repair the constant waste of tissue going on and the building of new tissues and organs, and also to keep up the bodily heat. These are the two distinct purposes of feeding. The animal body is made up of organic and inorganic matter. The inorganic, or mineral, matters we will not concern ourselves about, because it is not considered necessary to select special feedstuff in order to supply them, as they are usually present in all feedstuff in sufficient quantity to supply the bodily wants, except in the case of hens and other egg-laying fowls, where much more lime is needed than ordinary feedstuff contains. But this we all understand and also how well we supply this demand with beach shells, so plentiful here.

The organic matters we again divide in nitrogenous and carbonaceous, or non-nitrogenous matter.

The nitrogenous material, called protein, when considered in relation to feeding, we find in all parts of the body. In fact it forms the largest part of the body apart from water. It can be supplied only by the protein of the food, hence protein is absolutely necessary in all rations.

The carbonaceous, or non-nitrogenous, material is represented in the body as fat, but besides this fat, heat has to be maintained, and this fat and heat is furnished in the food by the fat and carbo-hydrates. These are then the fat formers and heat producers. While fat and carbo-hydrates serve the same purpose, fat will produce 2.25 times as much heat as the carbo-hydrates. It is therefore in a manner condensed carbo-hydrates, and as we so much desire condensed food for our poultry, we should not fail to make a note of this.

The carbo-hydrates represent starch, sugar, gum and woody fiber, all of which have an equal fuel value, but are not of equal digestive value. This, however, has not been tested in the case of poultry, except that we may say that the woody fiber in a general way are of the least value, and for this reason it is often placed in a separate column in feeding tables. All feeding tables divide the composition of the feedstuff in at least three parts, these: Protein, fat, carbo-hydrates. To add the fat to the carbo-hydrates we multiply it by 2.25, because as I said before, its fuel value is 2.25 times as much as the carbo-hydrates.

**THE NUTRITIVE RATIO.**—The nutritive ratio of a ration means the proportion of protein to carbo-hydrates we find in it. If a ration contains one part of protein to every five parts of carbo-hydrates, then the nutritive ratio is 1:5. The object of the feeder is to find the proper nutritive ratio for the animal he intends to feed; that is the balanced ration. When he has found this all he has to do is to consult his table of food analysis and select among the available feedstuffs such that will give the ratio he wants, just as you see in this chart of hen rations. Suppose you have alfalfa, hay, bran,

wheat and blood meal at your disposal, then you may use this formula here in this proportion or any other proportion that will give a total amount of dry food of about fifteen and a half pounds, with a nutritive ratio of about 1:5 for every 100 Leghorn hens. If you have other substances at your disposal feed them in the same proportion, so the nutritive ratio is nearer 1:5, which is about right for poultry, except that we may make it narrower for young and growing stock, and also for hens during their laying and moulting season, when the ratio had better be 1:4 or less. Bran, middlings and shorts are the most common mill foods we use.

Bran I do not like myself for poultry; it is too coarse. Middlings are no doubt the best mill feed for poultry, but partly on account of its higher price and partly on account of its stickiness, I do not use it much, but prefer shorts. The way most of us feed, our poultry consume at least twice as much wheat as they do of soft food. As the nutritive ratio of wheat is about 1:7 and that of shorts 1:5.4, and if mixed with skim milk, all it will absorb, 1:5, this will make the nutritive ratio of the two foods 1:6.3, which is too wide a ration, meaning that it contains too much carbohydrates to make it a balanced ration. We should therefore add to this, food rich in protein.

Of the animal foods dried blood is accordingly worth about twice as much as meat meal and some three or four times as much as fresh meat. Among the oilcake meals the linseed oilcake and cocoanut oilcake are used more by poultrymen, but cottonseed meal is, as you see, much richer in protein than either. One or more of these nitrogenous foods should then be added to the wheat and shorts ration in such a quantity that the ratio is about one part of protein to five of carbo-hydrates.

In choosing from these feedstuffs not only the cost but also the palatability should be considered, because a ration that is not relished will not prove profitable. A balanced ration is not the only thing to be considered. An unbalanced ration is not only a wasteful one, but long continued it weakens the fowl and invites disease.

Be as carefully observant as possible. You will often find your own observations to coincide with the results of the carefully conducted experiments of the agricultural stations.

**AN EXPERIMENT IN USING GRAIN PROTEIN VERSUS ANIMAL PROTEIN.**—At the New York agricultural station in 1898 experiments were made with a view of ascertaining whether grain protein could take the place of animal protein, and it was conclusively shown by these tests that the poultry fed rations where part of the protein came from animal sources, did in every way better than those fed grain alone. Now I think I can hear most of you say: "Oh, I know that. I have known it for a long time." But wait a moment.

In 1899 the station concluded to try the experiments over again. While the rations fed the year before were entirely alike, as far as protein and carbo-hydrates are concerned, they were found to differ in one particular—the mineral matter in the meat rations exceeded that of the grain ration. To make the two rations alike, even in mineral composition, bone ash was added to the grain ration, and then the former difference disappeared entirely as far as the chicks and laying hens were concerned, but not so in the case of ducks. Ducks evidently need some animal food.

I have for many years made it a practice to add to the soft food some, as we call it, wood ash. The evident benefit resulting from this I laid to the sweetening effect it had on the ash, which contained usually more or less sour milk. In reading of these New York experiments, I am now inclined to think that all the mineral matters of wood ashes are beneficial and often needed.

I do not think that bone ash only will answer the purpose, as the New York station seems to think. Until experiments have proved the contrary, I shall think wood ash will answer the purpose also.

### Roup and Its Treatment.

By DR. CHARLES F. DAWSON, Veterinarian of Florida Experiment Station.

Roup or avian diphtheria may attack all varieties of the domesticated fowls, also cage and wild birds. The characteristic symptom is the appearance upon the lining membranes of the mouth and nose of peculiar yellowish patches, which resemble those present in the throats of children suffering from diphtheria. These patches are adherent to the parts upon which they rest, and when stripped off cause a raw, bleeding surface. In a few days they become yellow, much thickened, and interfere with the breathing and prehension of food. In some cases the eye is affected. The eyelids become glued together and the material collects upon the front of the eyeball, causing great bulging and final destruction of the eye. A peculiar nauseating odor accompanies the disease, due to the decomposition of the pent-up secretions. Emaciation is rapid, from the absorption of poisons formed by the disease process and from the inability to eat. In some outbreaks the disease attacks the intestines,

resulting in bloody discharges and great loss. It lasts from a few days to a few weeks, according to its being acute or chronic in character. Some claim that roup is the same as diphtheria in man. If they are the same disease, why can we not find the germ of diphtheria in roup chickens as certainly as we can in a case of true diphtheria in man? Moreover, why can we not apply the diphtheria antitoxin treatment to fowls with the same expectation of favorable result as is now obtained by its use in human diphtheria?

I am unaware that anyone has yet satisfactorily demonstrated that the initial lesions of roup are due to a germ. Undoubtedly the putrefactive germs which are found in the sores have much to do with the progress of the disease. Roup is often confounded with other affections, the most common ones being ordinary colds and infectious catarrh. In any disease of this nature which has lasted three or four days, and in which the formation of yellowish patches upon the tongue, roof or back part of the mouth has occurred, treat for roup. If the fowl is not worth treatment, destroy it and burn the carcass.

**TREATMENT.**—The methods of treatment are isolation of the affected ones, a complete renovation of the hen house by scraping the floors, burning old nests, a liberal coat of whitewash to all wood work, and coating the floors with a layer of lime. This is to be followed by medicinal treatment of the affected ones. This should, in part, consist of the use of antiseptic washes for the nostrils, mouth and throat. Any of the following washes may be used: A 2% solution of creolin applied to the parts with a brush; equal parts of kerosene and olive oil, or cottonseed oil; boric acid, 15 grains to the ounce of water. In applying any one of these solutions, first remove those portions of the patches which can be detached without causing blood to flow. It is considered good practice to also dust the cleansed surfaces with flowers of sulphur.

The following wash is recommended by Salmon: Dissolve 35 grains of chlorate of potassium and 2 grains of salicylic acid in one ounce of water and add 1 ounce of glycerine. Apply this liquid to the spots two or three times a day, and give a teaspoonful of the mixture internally to each fowl. Great relief is afforded the fowls by fumigation. Place the fowls in a tight building and pour oil of tar on a hot brick, piece of iron or shovel. Do this twice daily.

The tumors which form on the head should be opened with a sharp knife and their contents washed out. The bleeding which frequently occurs can be checked by filling the cavity with raw cotton saturated with chloride of iron. Zurn recommends internally and externally a mixture of 150 grams of a decoction of walnut leaves (15 grams to a quart of water) with 20 grams of glycerine, 5 grams of chlorate of potassium, and  $\frac{1}{2}$  gram of salicylic acid in 15 grams of rectified spirits. Of this, give once or twice daily a tablespoonful to large fowls. He also paints the parts with the solution twice a day.

**FOOD AND TONIC.**—In addition to using any of the above treatments the birds should be given soft feed, and in cases where they can not eat the food should be given by hand. They should also be given a stimulating tonic, the following being recommended: Cayenne pepper, sulphate of quinine, sulphate of iron—of each one drachm. Mix and add a little honey or syrup as an excipient, and divide the mass into sixty pills. Give each fowl one pill three times a day. Convalescent fowls should not be returned to the healthy flock for at least a month after recovery.

## THE STOCK YARD.

### Making Alfalfa Hay in Kansas.

As the alfalfa haying season is in progress in California, our readers may be interested to compare their experiences with those of the Kansas growers. The Kansas Experiment Station has just published a bulletin on "Spontaneous Combustion of Alfalfa," and begins by describing a number of cases where stacks have been destroyed by conflagration resulting from fermentation of the imperfectly cured hay. This is not a California trouble, for we have much better conditions under which to make alfalfa hay, but the account of it is interesting. The writer of the bulletin says:

**CONDITIONS FOR SPONTANEOUS COMBUSTION.**—All cases of spontaneous combustion of alfalfa hay that have come to our notice have occurred with the first cutting. Early spring growth of alfalfa in an ordinary season is rank. The alfalfa is cut either in May or early in June, and at this time of the year the weather is such that it is difficult to thoroughly cure the alfalfa without getting it wet. Usually there is considerable damp weather and little wind after the first cutting is put in the mow or stack, and this hinders further drying. With later cuttings the growth is not so rank and succulent, the weather is dryer and there is often wind. This makes curing easy.

At this station we have not had alfalfa heat sufficiently to take fire; but we had it become so hot



that, as a matter of safety, we took it out of the oarn several weeks after putting it in the mow and stacked it outdoors. We have had so much trouble with the first crop heating that for the past four years we have stacked it outdoors and put the other cuttings in the barn. We have cured the first cutting as carefully as we knew how, keeping it several days in cocks, putting covers on the cocks at night, and opening the cocks during the daytime; and, with all these precautions, if there came a week or more of wet, "muggy" weather in July or August the alfalfa hay would become hot. If the weather stayed dry, no heating took place. The college barn is of stone and is well ventilated at the roof above the mows. In all cases of spontaneous combustion given in this bulletin the alfalfa was handled as little as possible, and was turned but little. This resulted in the leaves becoming dry while the stalks contained considerable moisture. Where weather conditions were favorable, this moisture in the stems was sufficient to promote fermentation, and in the cases given the fermentation generated sufficient heat to start a fire. Usually alfalfa will not get hot enough to do this, and the heating causes little damage. It is quite common to find alfalfa hay from the first cutting that is brown or black from heating, and the cattle eat it with relish.

**WHEN TO CUT ALFALFA.**—Alfalfa should be cut when not more than one-tenth of the plants have come in bloom. Cut at this early stage, the yield of hay for the season will be much greater than if the alfalfa is cut near maturity, and every pound of hay secured will be worth more for feed.

At the Kansas Experiment Station a strip through a field of alfalfa was cut when one-tenth in bloom, another strip was cut after full bloom had passed. The strip cut early was nearly ready to cut the second time when that cut after full bloom was being harvested the first time. The strip cut early grew vigorously through the season and made three cuttings and a good aftermath. The strip cut after full bloom made a low yield the first cutting and did not grow sufficiently to yield a good second cutting. Early cuttings invigorate the plant.

The late cutting of the first crop injures the plant more than at any other time, and we have found it profitable to cut alfalfa the first time as soon as one-tenth was in bloom, even though the weather was bad and we knew that the crop would spoil in curing. The increased yield from succeeding cuttings over that cut late much more than makes up for the loss of the first crop.

**HOW TO CURE ALFALFA.**—The leaves of alfalfa contain more than three times as much protein as the stems, a ton of alfalfa leaves containing as much protein as 2800 pounds of bran. Protein is the material in feed necessary for the formation of blood, lean meat and milk. Every effort, then, should be made to cure the alfalfa in such a way as to save all the leaves possible. The method of curing will vary with the condition of the crop, ground and weather. When alfalfa has made a slow growth, and, at the time of cutting, the ground and the weather are dry, there is no difficulty in curing. Often, under these conditions, it is safe to rake within a few hours after mowing, and stack a few hours after the alfalfa has been put in the windrows.

When alfalfa has made rapid growth and is rank and succulent, and the weather and ground are damp, the problem of curing is a difficult one. It is easy to dry the leaves, but the stems will contain much moisture after the leaves are too dry. Alfalfa hay should become so dry before stacking that when a handful of stems are tightly twisted together no water can be squeezed out. The most practical way to accomplish this, and at the same time save the leaves, is the plan to adopt, and this will vary with different seasons and places.

There is practically no difficulty in curing any but the first crop. When the conditions for curing the first crop are unfavorable, we have usually found the most practicable method to be to cut the alfalfa in the morning, after the dew is off; allow it to barely wilt in the swath, then rake and before night put in narrow, tall cocks. After the dew is off the next morning and the surface of the ground has become dry, we open these cocks carefully, so as not to shatter off the leaves. If the weather is favorable, the hay may be stacked in the afternoon; if not, we recock carefully and repeat treatment until the hay is properly cured.

Some alfalfa growers, in stacking the first cutting of alfalfa, put alfalfa and dry straw or prairie hay in alternate layers. This is a satisfactory way if the dry material is available. Others use ten to fifteen pounds of salt or air slaked lime for each ton of hay, sprinkling the salt or lime so as to cover as much of each load as possible. Experiments made at this station indicate that considerable less gains are made by cattle when salt is mixed with the feed. A trial of lime on alfalfa made at this station showed little effect. From all the experience we have gained to date, we advise the best way to prevent spontaneous combustion of alfalfa is to thoroughly cure before stacking. It is not often that all the conditions necessary to produce spontaneous combustion are present, and ordinarily there is no danger, where reasonable care is taken, except with the first cutting, and with this cutting only when the growth is rank.

## THE IRRIGATOR.

### Statistics of California Irrigation.

The special report of the U. S. Census Office, to which we have already alluded in previous issues, has a very interesting review of our local irrigation development prepared under the supervision of Mr. F. H. Newell of the U. S. Geological Survey. We present herewith certain general conclusions derived from the report:

California, with its varied topography, soil, and climate, offers an interesting field for the study of irrigation. No other State produces such a variety of crops, and in no other State have agricultural lands, as such, reached the selling price of the semi-tropical fruit orchards of southern California. Except in a few localities there is not, in California, the absolute necessity for irrigation that exists in most other Western States and Territories. On nearly all of the lands that are irrigated some crops will grow, in ordinary seasons, without artificial application of water. The more valuable crops, however, usually require irrigation, and with it the yield of all crops is increased greatly. An irrigation system is an insurance against crop failure in years of drought.

**IRRIGATION PROGRESS.**—In the ten years ending with 1899 the number of irrigators in the State increased from 13,732 to 25,675, or 87%; and the area irrigated, from 1,004,233 acres to 1,446,114 acres, or 44%. Of the total improved acreage in 1900, 12.1% was reported as irrigated, but the area actually irrigated was much greater than reported. In many localities, large areas which are of little value without water, and upon which water has not been directly applied, have been made fertile by the seepage from neighboring irrigated land. In most cases the enumerators did not report such land as irrigated, but correspondence established the fact that extensive areas were benefited in this way.

The census year 1899 was the the third consecutive year of extremely light rainfall. New ditches were built to supply lands that do not usually require irrigation, while other ditches were wholly or partially abandoned because of failure of the water supply.

As the artificial application of water requires more than the ordinary amount of labor and capital, there is, in most irrigation districts, a marked tendency toward intensive farming. In 1889 the average size of the irrigated farms of California was seventy-three acres, while in 1899 it was but fifty-seven acres.

In 1889, 26% of the farms of California were irrigated, and in 1899, 35.4%. Of the improved acreage, 8.2% was irrigated in 1889, and 12 1% in 1899.

It is difficult to fix upon any basis for a comparison of land values which will show the actual value added to the land through irrigation alone. Most of the lands have some agricultural value without irrigation. After water is supplied the value depends chiefly upon the use to which the land is put, and, in the case of orchards, upon the age and condition of the trees. While irrigation is not the only agency giving value to the high-priced farming lands, it is a vital factor in most cases. In every section of the State are tracts of naturally moist land, as productive as the neighboring irrigated lands, and of the same average value. The area of such tracts, however, is small.

**GEOGRAPHICAL.**—In 1899 there were operated in California 1913 ditches receiving water from open streams, lakes and springs by gravity, and used chiefly or solely for irrigation purposes. The total cost of constructing these ditches was \$12,855,012, and the area irrigated in the census year was 1,248,178 acres, making the average cost of construction per acre irrigated in 1899, \$10.30. The total length of the main ditches was 5106 miles.

Many ditches, especially in the southern part of the State, are supplied with water from other canals, although operated as separate systems. The business relations between the operators of the major system and the subsystems are often complicated, and the limitations of an investigation conducted chiefly by correspondence have made it necessary to consider as laterals all ditches not receiving water directly from streams.

Santa Clara is the only county of the San Francisco bay division in which irrigation is practiced to any considerable extent. The water taken from streams, which is supplied principally by Penitencia creek, is used chiefly for orchards, and is applied during the winter season, two or three applications generally being sufficient. In the other counties of this division irrigation is used chiefly for truck farms, although in Alameda county several hundred acres of alfalfa were irrigated from Alameda creek and other small streams.

The coast counties north of San Francisco bay have a heavy winter rainfall, and a summer precipitation from dews and fogs. There is some irrigation for truck gardens, and on the higher lands of Mendocino county a number of farmers apply water to their alfalfa fields. There are no large canals, each irrigator usually operating a small ditch of his own.

In 1899, 53,763 acres in Siskiyou and Trinity counties were irrigated from streams, principally the

tributaries of the Klamath river. Irrigation is practiced chiefly for hay and forage crops. The ditches used are generally of simple construction and comparatively inexpensive.

From the Sacramento river and its many tributaries, and from the streams flowing into Honey lake, 241,128 acres were irrigated in 1899. Gravity ditches used solely or chiefly for irrigation supplied 185,358 acres, while a large area was watered from canals used principally for mining purposes. In the northern counties of this division, the method of damming streams, causing them to flood the contiguous land, is often employed. Irrigation is sometimes used on the reclaimed marsh lands bordering the Sacramento river near its mouth.

The southern portion of the great interior basin of California is composed of the San Joaquin, Tulare and Kern valleys. There are no distinct lines of demarcation between these valleys, and they are usually included in the general term "San Joaquin valley," the San Joaquin river being the only drainage outlet to the sea. In this division 749,917 acres were irrigated in 1899, of which area 732,326 acres were supplied with water from streams, and a comparatively small acreage from ditches used principally for mining or power purposes. The owners of a number of farms which were formerly marsh lands, but are now protected from the river by levees, have successfully practiced irrigation by filling ditches with river water siphoned over the levees or let in through flood gates. In 1899 the number of ditches operated by gravity was 201, from which 724,329 acres were watered.

In Alpine, Mono and Inyo counties, agriculture without irrigation is practically impossible, and in these counties in 1899, 104,614 acres were irrigated. The water was supplied by streams, and was conducted by ditches built for irrigation purposes.

There were six irrigation ditches in San Benito county in 1899, from which 1868 acres were supplied with water. Alfalfa was the principal crop irrigated.

In the coast counties from San Francisco bay south to and including Los Angeles county, the number of irrigation ditches obtaining water from streams by gravity in 1899 was fifty-seven. From these ditches 48,626 acres, principally in Los Angeles and Ventura counties, were irrigated. Water is used chiefly for hay and forage crops.

In the three counties drained by the Santa Ana river there were, in 1899, 111,366 acres irrigated from streams by gravity ditches. In these counties, and in Los Angeles county, the water supply of several gravity systems is supplemented by water pumped from streams and wells, and in some instances by water from artesian wells. In the greater portion of California, most of the water in the rivers runs waste, but in the counties south of the San Joaquin valley the flow of the streams is completely utilized.

In San Diego county the principal systems from which water is obtained, although constructed as gravity ditches, are not included in the figures given above, as, on account of the light rainfall in 1899, the San Diego Land & Water Co. and the San Diego Flume Co. were compelled to pump water from wells. The majority of ditches reported had water for a short period only, and the acreage irrigated from each was much less than in an average year.

**IRRIGATION BY PUMPING.**—In 1899, 11,780 acres in the State were irrigated with water pumped from open streams and lakes. The plants used were similar to those employed in pumping from wells. On the lower Sacramento river a barge fitted with two 15-inch rotary pumps driven by an engine of 150 H. P., was successfully operated in irrigating the lands of its owners. The barge had a propelling wheel, and was rigged with pipes, derricks, etc., for lifting the water above the banks. This was the only floating plant reported.

Wells have an important place in the agricultural economy of California. Exclusive of the area watered from ditches whose stream supply was supplemented by water derived from underground sources, there were, in 1899, 152,566 acres irrigated from wells and tunnels. Water from streams is considered better for the soil than that from wells, as it fertilizes as well as moistens the land, while well water is sterile and often contains alkalies to a harmful degree. But, notwithstanding these admitted disadvantages, some prefer well irrigation, as the supply is certain and can be applied at the times and in the quantities desired.

Water is obtained from underground sources in three ways: By pumping from wells, by driving tunnels in the sides of hills and mountains, and by using flowing wells. Windmills are not generally employed, even the smaller plants being operated by steam, gasoline or electricity. Many of the systems are large and expensive, and plants costing \$10,000 or more, used for single farms, are not uncommon. Repairing is an important matter in the operation of pumping plants, not only on account of the expense, but because a breakdown might occur when the water is needed. For this reason, and because they are more efficient, centrifugal and pneumatic pumps are preferred to plunger pumps. The principal elements governing the cost of operating a pumping plant are the kind and condition of the machinery, fuel, labor,



the height to which the water must be lifted and the distance it must be carried, and repairing. As a rule, the larger the plant the less the cost of water per inch, and for this reason the farmers in many localities have built co-operative plants.

**FUEL.**—The fuel generally used is oil, either crude or distillate. With the development of California's oil fields this fuel became cheaper, making it profitable to pump water for crops. The oil industry and irrigation are mutually helpful. In 1899 the highest price reported for crude oil was paid in Tulare county—7 cents per gallon for a drum of 110 gallons. The lowest price was reported from Santa Clara county—85 cents for a barrel of forty-two gallons, or a little more than 2 cents per gallon. The price of distillate varied from 9 cents in Los Angeles county to 13 cents in Yolo county; and that of gasoline, from 15 cents in Santa Clara county to 20 cents in Colusa county. Most of the pumping plants in Santa Clara county use wood for fuel. Wood costs from \$2.50 to \$8 per cord. One irrigator reported that he had substituted an oil engine, using \$2.10 worth of crude oil per day for a wood-burning plant which, while consuming \$8 worth of fuel per day, pumped only the same quantity of water. Coal is used to some extent, and a few plants burn the branches trimmed from orchards. Most of the plants in Tulare county are operated by electricity furnished by power companies.

## THE FIELD.

### What Can be Done With Johnson Grass?

#### NUMBER II.

**ERADICATION.**—A large number of planters who own land infested with Johnson grass are firm in the belief that it can not be killed under any circumstances or by any methods. This may have been true in their own experience, and yet it is to be regretted that when the possibilities of ridding the land of this grass have been fully proved so many allow their prejudice to prevent their achieving similar desirable results. They are convinced that it can not be done, and so refuse to accept these evidences of successful work or to try it for themselves. There is no one method which can be recommended as certain to be successful under all conditions. Within the area of the United States now infested with Johnson grass there is too wide a variation in the conditions of heat and moisture and character of soil to allow of unvarying times and methods of culture. Therefore, in any method much must depend on the good judgment of the cultivator. There is no doubt, however, that fields have been entirely freed from this pest. Instances have been found in almost every community. They are most common in those States where Johnson grass has been longest known and where the planters have become most familiar with it. In some cases these good results have been obtained under field conditions; in others successful results have been obtained where only small patches were concerned. In this latter case the means used would often not be practicable or economical if the work required was on a large scale. A very large number of methods for destroying Johnson grass have been advocated at different times and places. Many of these are worthless, having been advocated by those not very familiar with the plant, in its serious aspect, as a menace to crops. The conditions necessary to the destruction of this grass are simple, but to fulfill them all is a very difficult matter. To entirely rid a piece of land of Johnson grass requires that every seed and plant be destroyed. The seeds in or on the soil must be made to germinate and the young plants killed; all the old plants must be destroyed, and the complex "root" system must be either killed or so discouraged that it will cease to send up green sprouts, and so finally starve to death. There are, perhaps, three methods by which it is possible to accomplish these results. The first is by hand labor, the second by field cultivation, the third by the use of chemical substances. The first and second methods are frequently combined.

**HAND LABOR.**—Hand labor is naturally slow, expensive and utterly impossible on large areas. For small patches scattered about in fields or gardens, or in situations where teams and machinery can not be used to destroy them, hand labor is most economical, having also the advantage of being usually more thorough and less dependent on external conditions than any other method. The plants are uprooted and all the stems to the last fragment removed from the soil, all being hauled away and burned to prevent their taking root again and doing further damage. The great difficulty of this method lies in reaching the depth necessary to find all the stems, and it is also always uncertain that every one of the small fragments has been removed from the soil; but both must be done before there can be any assurance that the spot is free from danger of a new crop. The question of hand labor as a factor in destroying this grass will be considered in connection with certain patent methods.

**CULTIVATION.**—When it is desired to destroy Johnson grass by cultivation, there are a variety of methods that may be employed. The land may be fallowed

in summer or in winter, or it may be worked in some crop. A combination of two of these may be used. The purpose of cultivating in summer fallow is to expose the underground stems to the heat of the sun; that of cultivating in the winter fallow to expose them to the action of frosts.

**WINTER FALLOW.**—The method of winter fallowing the land and frost killing the grass can be used in only a small part of the large Johnson grass region. The grass does not usually become very troublesome where the climate is cold enough to allow of killing the exposed stems by frost. There is, however, a considerable area in the northern part of the Johnson grass belt where this method will be quite successful in the average winter. The performance is quite simple and very effective. The field is plowed up in the late autumn to a depth of 3 or 4—or even 5— inches, depending on the amount of frost that may be expected. This soil is kept exposed until the stems in the turned portion have been killed by the cold. The ground should then be plowed again, preferably crosswise to the first plowing. The second plowing should go to a greater depth than the first, in order to turn up a new layer of fresh, uninjured stems. By plowing crosswise the second time any stems left deeply covered in the turned soil at the first plowing are more apt to be exposed, while any cutting and covering done during the first operation would be unfailingly remedied by the second. Ordinarily two plowings would be sufficient for the purpose. No doubt some pieces of stems will survive even this treatment. Where the number is small and the patches scattered, it is best to dig them out by hand during the growing season.

**SUMMER FALLOW.**—The most uniformly successful method of destroying the grass is that of summer plowing fallow land. The field may be sown in the fall to some grain crop, to be taken off in the late spring. If the land is a meadow, one cutting of hay may be secured before the time for the destruction of the grass. The best time to commence the process of eradication varies. It must be done during the six weeks or two months when the longest period of hot, dry weather may be expected. This will be between the last of June and the first of September, ordinarily. It may, however, commence as early as June 1, or even in May, as was the case the past summer. If the grass is growing vigorously at the time the plowing is begun, the more surely will it be killed by the disturbance and exposure of its stems. If it is in a resting condition, any cultivation during the growing season will serve only to promote a more rapid growth unless the grass has been greatly weakened by previous unfavorable conditions.

At the first plowing the soil should be turned to a depth of 2 or 3 inches, or a little more. This will depend upon the mechanical condition of the soil and the quantity of stems present in it. If the soil is loose and open and the quantity of stems in it is not great enough to form a compact sod, the land may be safely turned to a depth of over 3 inches. If, however, the land is of a firm and tenacious character, turning up in clods or sods, or if the stems are abundant enough to produce this effect, the plowing should be shallower. In any case the soil turned over must not be deeper than the sun will penetrate with killing power; otherwise that portion of the stems buried most deeply by the turning will remain uninjured and will be stimulated to vigorous growth. This renders the labor of destruction more difficult than if a shallower stratum had been turned and all the stems included in it killed by the heat. In some cases it may be desirable to use a disk or Acme harrow on the land immediately after the first plowing, both in order to level the surface if it be clodded and to expose more of the disturbed stems than would otherwise be done. The field should then be allowed to remain undisturbed until the sun has had time to do its effective work and until a new growth has appeared from that portion of the stems below the level of the first plowing.

When this growth has reached a height of about 5 inches, showing that the living rhizomes are again vigorous, the second plowing should be given. This should be done crosswise of the field, or at right angles to the first plowing, in order to certainly remedy any cutting and covering done during the first plowing. The second plowing should be about 2 inches deeper than the first, if possible. This will also vary with the condition of the soil and the depth of the first plowing. The idea is to turn up a fresh layer of the underground stems to the action of the sun, and the same requirement as to the thickness of the layer of fresh stems thus turned should be observed.

The success of this method of summer killing will be seen to depend very largely upon the length of time during which dry, hot weather is maintained. If a period of rain should set in after the first plowing has been done and before the stems exposed by the plowing are dead, their vigor will be increased and the length of time necessary to kill them will be thus extended. In that event as many as three plowings might be necessary in order to complete the work of destruction. However, in most of the Johnson grass belt several weeks of fairly hot and dry weather may be confidently looked for during the summer.

Where the soil is not too hard or lumpy a spring-

toothed harrow may be used to drag the stems from the soil after plowing. They can then be collected and burned. Even under the most favorable conditions it is probable that some stems will escape destruction and produce new growth when the rains commence. The importance of completely ridding the field of the grass can not be too strongly urged. The small scattered patches do not at first appear troublesome or dangerous, and too often they are neglected and allowed to quickly reseed the whole field. A comparatively small amount of labor will clear them out to the last stems, and the desired result will thus be secured. If this is not done the good results of the repeated plowings are lost and the field is soon as bad as ever.

**CULTIVATION IN CROPS.**—Many planters have testified that they have cleared their fields of Johnson grass without interrupting the ordinary system of cropping. In some instances this has been done in a single season. In others it has been accomplished only in from three to five years of labor. The crop raised is usually cotton, and the method always involves a large amount of hand labor. This method is expensive, and yet where it can be practiced the more thorough cultivation thus given is repaid by the increased yield of the crop. To be successful it must be entered into in no half-hearted way, as it always demands careful work and unrelaxed vigilance. At every plowing or cultivating of the land the stems exposed on the surface are removed from the field and destroyed. Plants persisting in the rows are dug out and destroyed when the crop is hoed, and this constant warfare is repeated month after month and year after year, if necessary, until the land is free.

(TO BE CONTINUED.)

## HORTICULTURE.

### Breaking Up Plow Sole.

The Covina Argus reports that "A. P. Kerckhoff, who owns forty acres of orchard to the east of this city, is pursuing a new method of plowing this spring. His land is rather heavy, and like all orchards, especially in heavy soil, the continual cultivation at a certain depth creates a hard crust about 8 inches below the surface of the ground. For the trees to secure the benefits of irrigation and for the proper aeration of the soil, this crust must be broken, and for the past several years in this locality ranchers have been giving this matter a great deal of thought as to the best methods to be pursued to accomplish this end.

"The method as pursued by Mr. Kerckhoff requires the use of three plows. He first throws three furrows toward the trees on each side, with an ordinary three-furrow gang, graduating the shares so as not to seriously disturb the feeding roots. This completed, he used a large disc plow drawn by four horses, following closely behind this in the same furrow with an ordinary walking plow, which, combined with the disc, thoroughly breaks the hard, crusty formation. This method of plowing leaves a deep dead furrow in the center of the rows, but this objection is overcome when the entire orchard is plowed by throwing the soil back into the dead furrow with a gang.

"This method of plowing on heavy soil pulverizes the soil, breaks the under crust and allows the roots to secure the benefits of irrigation which cannot be accomplished by any other means. The trees cannot thrive and remain in a healthy condition so long as the hard under crust created by irrigation and shallow cultivation is allowed to remain."

An illustration of how easily the business of growers of fruit may often be transferred from one handler to another is afforded this year at Florin, where the association of berry growers, after lending the Japanese strawberry farmers considerable money, refused to lend them about \$7000 more which they needed. It was lent to them by Mr. W. O. Davis, manager of the association, acting personally, on crop mortgages from the borrowers to Mr. Davis; and a little later Mr. Davis left the employment of the association and is now in business for himself, whether as a strictly independent factor or as the representative of one of the large firms of commission shippers in the State is yet undetermined, having the handling of the output of those to whom he lent.

The topic of most interest in the comparatively few fresh fruit Eastern shipping portions of California, at present, is the probable effect of the combine of big commission shippers (most of whom, if not all, are also growers themselves) upon those growers who are not commission shippers. The general impression growing out of the various articles in the papers and circulars put out by the parties to the combine seems to be that their regulation of the Eastern market, so far as it can be done by their shipments thereto, will be a good thing for them, but whether it will be a good thing for other fruit producers is a problem.



## Agricultural Review.

### ALAMEDA.

**SHORTAGE OF LABOR**—Oakland Enquirer: The opening of the fruit canning season brings the canners face to face with the problem of help. From present indications the crop of apricots and peaches is going to be the largest in the history of the county, and the matter of taking care of it is causing canners and owners of driers some worry. Heretofore the canneries have recruited their assistance from "floating help" to a great extent. The heavy labor has been performed by men and there has been an abundance of women and girls to take care of the "inside" work. The demand for men in the orchard and harvest field is at present ahead of the supply and even the inducement of increased wages has not materially removed the worry of those seeking help for summer work.

### BUTTE.

**SIX HUNDRED TURKEYS STOLEN.**—Chico Record: There are numerous crooks in the State's prisons who would undertake most daring feats of theft, but it may be doubted if there are any who would attempt to steal 600 live turkeys. Such a theft was committed Friday night in Butte county, within a few miles of Chico, and the constabulary officers are endeavoring to find some trace of the stolen poultry. A. B. Butler Jr., who is conducting a poultry ranch on Pine creek, is the loser of the young turkeys, and he reports that in order to get the turkeys away without attracting attention, the thieves first took the precaution to poison his dogs. He believes that he will be able to locate the birds. The fowls were not fit for market. Every one of them is marked, so that turning them loose with other flocks will not suffice to protect the thieves.

### FRESNO.

**DRIVING CATTLE FROM 'HOPPERS.**—Sanger Herald: One hundred head of fat cattle from W. B. Hazelton's range in the foothills were driven through town last Tuesday en route to Fresno, having been purchased by a butcher at the latter place. We understand that the price paid was 7½c. Mr. Hazelton says the grasshoppers are so numerous out his way that he was afraid they would eat up his herds after destroying his trees and alfalfa, so he decided to convert them into hard coin in order to be on the safe side.

**NEW GRAIN COMING IN.**—The first wagon load of new crop wheat arrived at Miller & Weil's warehouse in this place on Tuesday, the 10th, from P. M. Savage's ranch north of town, the grain being of good quality. Mr. Savage says the big windstorm of last month whipped out the grain to a considerable extent, so that the yield is falling short a couple of sacks to the acre. Leroy Taylor of Round Mountain district reports that he is harvesting seven sacks to the acre on summer-fallowed land. On the Balfour-Guthrie ranch, west of town, the yield of wheat on the summer-fallowed land is ten sacks to the acre, while the winter-sown grain yields only four sacks.

### GLENN.

**FIGHTING 'HOPPERS.**—Willows Journal: The northern section of Glenn county is suffering from the grasshopper plague. During the past few days they have made their appearance in countless millions in the neighborhood of Orland, and every precaution is being taken to keep them from destroying the trees. It is reported that 400 young trees in one orchard near that town have been stripped of their foliage and the trees ruined by the pests. Owners of orchards are "sackling" their trees and by this means, which involves great expense and labor, the ravages of the insects are expected to be stopped.

### LOS ANGELES.

**FOREST RANGERS TO BE INCREASED.**—A Los Angeles dispatch states that six forest rangers are to be added July 1st to the force at present employed in the San Gabriel and San Bernardino forest reserves. Authority for the employment of these men has been received by Forest Supervisor E. B. Thomas, and the names of the appointees have been sent to Washington for approval by the Commissioner of the General Land Office. The men have been chosen from the staff that was employed last summer. This makes a total of twenty-nine forest rangers in the two reserves, as against twenty-three employed during the winter, and eleven less than were engaged in the same service last summer.

### NEVADA.

**CATTLE DYING OF DISEASE.**—Grass Valley Union: There is a fatal disease at present prevalent among cattle in the vicinity of Columbia Hill. C. J. English has lost seven or eight from his herd and

other cattlemen are also complaining that their stock is suffering. The disease is said to be blackleg.

**TO GO TO SUMMER PASTURES.**—The stockmen in the vicinity of Pleasant Ridge are now in the midst of their annual rodeo. They are getting their stock together preparatory to moving to the summer pastures in the vicinity of Emigrant Gap. The hay crop in the Pleasant Ridge country is almost gathered and is one of the largest harvested in that country in some time.

### ORANGE.

**THE LOS ALAMITOS BEET CROP.**—Santa Ana Blade: E. C. Reeder and J. D. Shutt, Los Alamitos farmers, report that the outlook for the beet crop is very satisfactory. About three-quarters of an average crop for all the ground planted is reported as the output, and the yield will be sufficient to keep the factory going for a three months' run.

**WALNUT CROP PROMISES TO BE LIGHT.**—W. M. McFadden, president of the Fullerton Walnut Association, says there will be a shortage in the walnut crop in Fullerton and Rivera, two leading walnut sections of southern California, of at least 25%. Leading producers say they are going to hold out for 12 cents per pound for the entire output this season.

### RIVERSIDE.

**IRRIGATED GRAIN DOING WELL.**—Press and Horticulturist: Grain harvest on the Hemet lands is in full blast. Where irrigated the crop is good, otherwise it is light; but even with light crops there seems to be an ocean of hay in sight. Fruit gives promise of an abundant crop and employees are being hired weeks in advance.

**FINE RETURNS FROM TEN-ACRE ORANGE GROVE.**—Apropos of the remarkable prices of the Navel orange season just closed it may be of interest to quote an interview with D. D. Gage and the record of his ten-acre grove, El Retiro, for the past five years. Mr. Gage bought the grove five years ago this month and has kept a careful record of fruit sales to date. The gross returns on the five crops amount to \$19,300. Mr. Gage attributes the excellent returns of his grove to its favorable location for producing early fruit, and the conditions of soil which enable him to hold his fruit for the late market—thereby receiving the full benefit of the high prices usually prevailing at the beginning and ending of the orange season.

### SAN BENITO.

**HAY CROP LIGHT.**—Hollister Free Lance: The falling off in the hay crop this year in the territory tributary to Hollister promises to amount to a considerable figure, according to the estimates made by those who are in a position to know. Last year the hay crop footed up 40,000 tons, while the estimate this year places the output at 18,000 tons. This will be a heavy loss and one unexpected, as the season during the spring months promised, at least, an average crop.

### SAN BERNARDINO.

**CHICKENS KILLED BY LIGHTNING.**—Times-Index: An electrical storm Tuesday night played many pranks in different parts of town. Early in the evening a ball of fire was seen running along the trolley wire out Third street above H. The fire played back and forth between two blocks, and then, leaping to an electric wire, burned out the fuse in an arc light. Out on Base Line, a quarter of a mile beyond Central school, twenty chickens were killed by lightning. The fowls were owned by a family named Garner. When Mrs. Garner went into the yard in the morning she found the chickens all dead, their bodies within a radius of 3 yards. Within this radius there is a steel scraper, and it is surmised that the lightning struck this and its effect killed the fowls. That they were not drowned by the heavy showers is made evident by their condition. Their feathers were singed and the bodies discolored.

### SAN DIEGO.

**SQUAWS CREMATING GRASSHOPPERS.**—A San Diego dispatch says the country about Warner's Hot Springs is infested with grasshoppers. For the last two weeks they have been hatching very fast, and the superintendent of the big Warner ranch has an army of squaws fighting the as yet wingless pests. With sacks or brush the squaws drive them into ditches already prepared, where they sack them and carry them to another ditch arranged with burning straw, into which they are dumped.

**LIGHT HONEY CROP.**—M. G. Demarest, one of the leading honey men of San Diego county, says the outlook for a good crop is very poor. The weather has been very unfavorable, so a light crop is expected. He anticipates much better prices on this account.

**BIG APPLE CROP.**—Redlands Facts:

J. W. Mitcheltree, from Julian, this county, reports the prospects for apples the best ever had since the planting in that portion of the country, the trees being very heavily laden. There was no frost this year to take off some of the fruit, as is commonly the case.

### SAN JOAQUIN.

**STATEN ISLAND CROPS ALL RIGHT.**—TO THE EDITOR: On page 395 of your issue of June 14, 1902, it is stated that the bean crop on Staten Island is almost a total failure. This is totally incorrect; we have not lost an acre, and all crops, beans, potatoes, onions and grain promise an abundant yield on the decreased acreage, the upper division being now devoted entirely to cattle raising and feeding.—E. C. JOHNSON, Supt.

**MAKING MONEY ON GOOSEBERRIES.**—Lodi Sentinel: G. Favinger of the Langford colony was in town Monday displaying some extraordinary gooseberries which were raised on his ranch. They are of large size and bring from 12 to 15 cents per pound. Mr. Favinger claims that they are more profitable than any fruit in the market and he cannot half fill the demand for them. He will plant several more acres and make a business out of it hereafter.

### SANTA BARBARA.

**WILL RAISE TURTLES.**—Press: A new and important industry is about to be started at Carpinteria. It is the raising of terrapins for market, and the promoter of the enterprise is Dr. Cauch. The doctor has on his place at Carpinteria an abundance of water for the turtles to occupy, and as there is little else requisite for their successful growth, it is expected that the experiment will prove a paying venture. There is a growing market for turtles for food.

### SANTA CRUZ.

**FRUIT NOTES.**—Watsonville Pajaronian: Offers of \$17 per ton were made last week for apricots in the eastern part of the valley.—There is now but little difference of opinion about the Bellefleur crop. It is making a lighter showing than it has for several seasons.

**CHAMPION GOPHER HUNTER.**—Gophers are a far more serious menace to fruit interests than most people believe them to be. They not only destroy young trees by cutting the roots, but have been known to kill trees that were fifteen or sixteen years old. The older trees die by degrees as the source of life is gradually taken from them by the gophers, which gnaw off the roots. When a fruit tree shows signs of dying, without apparent cause, a little investigation will often reveal the presence of an active gopher at the roots. Jeff Rodgers has destroyed more than 500 of the rodents on H. C. Rodgers' place on Lake avenue this spring. Jeff has been killing gophers for more than twenty-five years and knows their habits as well as their appetites. He feeds them on apples, carrots and new potatoes, the gophers being very fond of each of these. The diet is changed from time to time, but Jeff always seasons it with a little strychnine. This he finds to be the best remedy, as it does its work effectually in every instance.

### SHASTA.

**THIEVES STEAL YOUNG TURKEYS.**—Searchlight: Wednesday night 500 young turkeys were rounded up near Anderson and made away with. The birds were all about half grown, being valued at from 50 to 75 cents apiece. They were all stolen from the Schade fruit farm on the river bottom, about a mile and a half from Anderson, and were the property of W. L. Wentworth, manager of the orchard, and W. Thomas, lessee of a piece of the Schade land. Thomas, who makes a business of raising turkeys, was the heaviest loser. The young turkeys did not roost in the trees. They would gather in herds on the ground at the foot of the trees in which the old birds perched. The theory is held that two or more men visited the Schade place, gathered the young turkeys in a basket and carried them to their wagon. They could repeat the performance until daylight interfered with their work or the supply of turkeys became exhausted.

### SONOMA.

**FRUIT PRICES.**—Sonoma County Farmer: Five cents is being paid at Healdsburg for the best cherries; \$22.50 being offered for peaches. One party says he has stopped offering Crawford peaches for sale since he has been able to make them bring \$30 dried. Another grower states that, while the cannery cuts out all scabby pears, he is able to make a good merchantable dried fruit of them.

**HOP CONTRACTS.**—A Santa Rosa dispatch states that a large number of hop contracts were filed there recently, covering the sale of the 1902 crop, at prices ranging from 13¢ to 13½¢.

### SUTTER.

**HORSE BROKE A BLOOD VESSEL AND DIED.**—Sutter County Farmer: Sam Price lost a valuable horse Monday while having it shod. The horse was a fractious one and was shod with difficulty. As it was being released from the ropes at the conclusion of the job it threw itself backward breaking a blood vessel and soon died from internal hemorrhage.

**BUYERS HUNTING ALMONDS.**—A number of almond buyers have been in the vicinity of Yuba City recently, but it is not known that many contracts have been closed. The advanced offers are in the neighborhood of from 8 to 10 cents, although a few lots have been contracted for at a trifle higher prices.

**SCALE IN ORCHARDS.**—The fruit growers near Yuba City are somewhat alarmed over the rapid spread of a new scale in their orchards. Prune, plum, apricot and cherry trees are affected. The county commissioner says it is the brown apricot scale.

### TULARE.

**GRASSHOPPERS EATING ORANGES.**—Times: The grasshoppers are becoming so numerous in the vicinity of Globe, on Upper Tule river, that the orange growers have resorted to wrapping their trees with paper to protect them from the ravages of the pests. J. M. Akin of Springville states that, while the hoppers have not appeared there, they are in that vicinity in large numbers and at the orange orchard known as the old Talbot place they are eating the oranges on the trees. To protect his nursery of 20,000 young orange trees, Andrew Hoover has run furrows alongside of the trees and covered them with soil for protection, and if they are not kept covered too long will probably be saved. Other orchardists are resorting to covering their big trees with mosquito netting, but Mr. Akin is doubtful about any good resulting from that plan, as the hoppers will probably eat through the netting.

**MAKING SMALL FARMS.**—P. F. Wood of Tulare reports the consummation of a land sale that will mean much for the southeastern portion of Tulare county. He sold to W. H. Bonner 1047 acres of the old Jones ranch and the purchaser will cut it up into homes for about twenty-five families. Alfalfa seems to be the product to be raised and water will be put on the place at once. Mr. Bonner lives in Los Angeles and represents Eastern men in the transaction.

**FOILED THE HOPPERS.**—Visalia Delta: Dan G. Overall returned from Lemon Cove Wednesday, after spending two days in that vicinity preparing his citrus orchard for the attack of the grasshoppers. Mr. Overall had his small trees well protected with sacks and put out an unlimited amount of poison. The poison consisted of arsenic, bran and sugar mixed. The hoppers eat the preparation and many of them pass away without making another jump. Mr. Overall has no fear of the pests injuring his orchard from the way they were checked by the poison.

**FIGHTING GRASSHOPPERS.**—Register: Exaggerated reports were circulated this morning of the damage done by grasshoppers at the Paige vineyard. A few vines down in one corner of the vineyard were stripped, but prompt action on the part of Superintendent Montgomery and his men headed off the hoppers. The manner of fighting them may furnish a pointer to others. He called out his men and each provided himself with a stick, to one end of which was fastened the half of a barley sack, making of it a flag. Several loads of manure were strewn along the threatened corner of the vineyard and sprinkled with kerosene, being then set on fire. The men then formed in line, and, waving their banners near the ground, drove the hoppers back out of the vineyard.

### VENTURA.

**OXNARD WALNUT GROWERS.**—The Oxnard walnut growers recently formed an association for the purpose of looking after the marketing and selling of the walnuts raised in the districts south of the Santa Clara river, which are estimated at 300 tons this year, based on last year's crop. Among the walnut growers of this district who are members of the new association are: T. A. Rice, P. S. Carr, R. B. Edmondson, L. J. Rose, Jr., L. Pfeller, Z. Graham and W. Arnold.

**APRICOT CROP BADLY SPOTTED.**—From the reports received from the heaviest producing sections of the country experts estimate the probable output as thirty-five cars of dried apricots, or about 500 tons this season. It is considered probable that nearly the entire crop will be dried. The fruit gives indications of excellent size and quality. Reports from different sections of the country show that in some localities the orchards promise unusually heavy crops, while in others the crop will be very light.



## THE HOME CIRCLE.

June.

What is so rare as a day in June?

Then, if ever, come perfect days:  
Then heaven tries the earth if it be in tune.  
And over it softly her warm ear lays;  
Whether we look, or whether we listen,  
We hear life murmur, or see it glisten;  
Every clod feels a stir of might,  
An instinct within it that reaches and

towers,  
And, groping blindly above it for light,  
Climbs to a soul in grass and flowers;  
The flush of life may well be seen  
Thrilling back over hills and valleys;  
The cowslip startles in meadows green,  
The buttercup catches the sun in its  
chalice,  
And there's never a leaf nor a blade too

mean  
To be some happy creature's palace;  
The little bird sits at his door in the sun,  
As if like a blossom among the leaves,  
And lets his illumined being o'errun

With the deluge of summer it receives;  
His mate feels the eggs beneath her wings,  
And the heart in her dumb breast flutters  
and sings;  
He sings to the wide world, and she to her  
nest—

In the nice ear of Nature, which song is  
the best? —Lowell.

## Take the Fruit I Give You.

Take the fruit I give you, says the bend-  
ing tree;  
Nothing but a burden is it all to me.  
Lighten ye my branches, let them toss in  
air;  
Only leave me freedom next year's load to  
bear.

Do my waters cheer thee, says the gurg-  
ling spring,  
With the crystal coolness 'tis their life to  
bring?  
Leave me not to stagnate, creeping o'er  
the plain.  
Drink for thy refreshment; drink, and  
come again.

Can I yield you blessings? says the  
friendly heart.  
Fear not I am poorer, though I much  
impair.  
Wherefore should you thank me? Giving  
is my need.  
Love, that wrought none comfort, sorrow  
were, indeed. —Lucy Larcom.

## Because of Ideals.

"May I walk home with you?" he  
asked.

It was past 8 o'clock on a wet win-  
ter night, and they had just come out  
of church where the vicar had been dis-  
cussing eloquently on the social equality  
of man.

The girl looked up at the sky, opened  
her umbrella, and said, "Yes."

"You think he was right?" The man  
nodded his head in the direction of the  
building they had just left.

"Not at all," said she, with a little  
toss of her head. "I think he was all  
wrong in general."

"But in particular?"

"You and I have nothing to do with  
particulars," she remarked, kicking  
away a stone which lay in her path.

"We are particulars"—briefly.

"No, we are not," retorted the girl.  
"We are most decidedly generals. My  
father is General Garwithen, my grand-  
father was General Carwithen; your  
father is—a general dealer." This lat-  
ter was said under her breath.

The man did not contradict her; he  
merely asked her if it made any differ-  
ence to themselves.

"I think we are, and always shall be,  
as far apart as those two stars," she  
said sadly.

The rain had ceased and two watery  
stars twinkled feebly in the gloomy  
sky.

"I am nearly home now," she said,  
after a little silence. "You had better  
not come any farther. Good night."

The man apparently did not see the  
hand she held out. He said good night  
laconically, but he turned and watched  
her until she was out of sight.

Once home, she flung herself on the  
bed in an agony of despair. The man  
found his friend awaiting him on his  
doorsteps.

"Hello! You look a bit down in the  
mouth, Needham. I knew this busi-

ness wouldn't work satisfactorily," he  
said.

"It's working splendidly," answered  
the other.

"Then what is it?" asked his friend.

Randal Needham gave a little laugh  
and shrugged his shoulders. "The tale  
is as old as the hills, Arthur," he said.

"I am in love."

"Phew!" ejaculated his friend.

"Oh, it's all right," said Needham.

"She is a perfect lady," Arthur  
glanced around his friend's study.  
Violins and bows galore littered the  
room; music was the dominating passion  
of the man's life.

"She doesn't know?" he asked.

"Not she!" answered Needham.

"She thinks my father is a general  
dealer in—only heaven knows what!  
But I'll make her own she loves me be-  
fore she does know. No one here has  
ever guessed my story. I am a poor  
violin teacher, pure and simple."

"Not so simple either," Grosvenor  
laughed.

The two men had brought out their  
pipes and sat puffing away at them to  
their heart's content.

"Look here, I met an old woman I  
know in the street to-day," went on  
Grosvenor. "I told her I was staying  
with you, and she asked me to dine  
there; she turned up her lofty nose  
with scorn at the bare idea of you join-  
ing her select party table. No one is  
good enough for Mrs. Ranter; she has  
her precious girls' future to think of and  
you are not an eligible."

"Ranter!" echoed Needham. "Why,  
that's the name of my best pupil's  
mother. Are you going?"

"Is thy servant a dog?" returned  
Grosvenor.

"Mrs. Ranter is one of the most ar-  
rant humbugs on the face of this earth.  
Nothing short of a title is worth any-  
thing to her," said Needham.

"Oh, I know her," returned the  
other. "I think she would sell her  
soul for position."

"If she had one," added Needham,  
and they both laughed.

"How did that 'general dealer' idea  
get about?" asked Grosvenor. He  
had stopped smoking to refill his pipe.

"Oh, I don't know!" answered the  
other. "I expect Mrs. Ranter is at  
the bottom of it, and I haven't contra-  
dicted it because it served my purpose  
well."

"You were always a rum chap, you  
know," said his friend. "I can't think  
how it is people don't see through  
you."

Needham paused in the act of put-  
ting some coal on the fire. "I have  
always had my ideals," he said. "One  
of them was to be loved and married  
for myself alone. My father, being out  
in Canada, made it easy for me to sink  
my identity. And I've had an ideal  
existence, too," he added. "It's  
rather fun to be snubbed when you  
knew it is unnecessary."

Grosvenor looked thoughtfully into  
the fire. "I had ideals, too, once upon  
a time," he said. "I would have died  
for any of them any day. The difficult  
part was to live up to them."

"Don't outlive them, old fellow,"  
said Needham. "It is a mistake. When  
the real sun shines in the reflected glory  
of the ideal, it is always better for it."

"Do you really think so?" asked  
Grosvenor, as he got up. "I am off  
to bed now. If I stay up any longer  
you will be persuading me to follow  
your example, and I don't think I  
should find it as amusing as you did."

The next morning Randal Needham  
was coming back from giving a lesson  
when he saw Cecil Carwithen in front  
of him. She was carrying her violin  
case and looked white and tired.

"You must let me have that," he  
said, masterfully, pointing to the case.

"And now tell me why you are looking  
so pale this morning."

A slight flush mounted to her brow.

"I am tired," she said briefly.

"That isn't all," he replied.

At this moment Mrs. Ranter bore  
down upon them. She cut the girl,  
and bowed icily to Needham. It  
would not do for her to offend him.  
Kate was beginning to play the violin so  
well under his careful tuition.

"Cecil," said the man, possessing  
himself of her hand, "you know I love

you, dear. Couldn't you make up your  
mind to marry me some day?"

"It's no use," she said sadly. "My  
parents would never consent."

"Oh yes they would!"—in a tri-  
umphant tone.

"Our lives lie in different direc-  
tions," objected the girl.

"But I make enough to keep you,"  
urged Needham. "You need never  
do a stroke of work. And I am not  
common nor vulgar, whatever my  
father may be. Cecil, say you love  
me."

The girl looked at him and he read  
the answer in her brown eyes. Then  
she seized her violin out of his hand  
and flew, leaving him staring stupidly  
after her, with a whole world of joy  
on his face.

For the next week neither of them  
saw each other. Randal Needham  
went away suddenly the day after,  
and stayed away, to the surprise of  
his pupils (for it was term time) and  
the righteous indignation of Mrs. Ran-  
ter. "But what could one expect of  
a man like that?" she whispered con-  
fidentially to her bosom friend, a lady  
whose great niece had married the  
great nephew of a baronet.

Needham came back the day after  
this charitable remark had been made.  
He was in deep mourning and his first  
visit was to General Carwithen. Cecil  
was in the garden, and thither he  
wended his way after the interview  
was over.

"I have come to claim you," he said.

"What has made father consent?"  
asked the girl. The tones of her voice  
were incredulous.

"I have informed him of a few  
facts; and now I must break them  
gently to you," he answered.

The wind had ruffled Cecil's hair,  
and he smoothed it back with a loving  
gesture.

"I am not bound to work for a liv-  
ing," he said, "and—"

"Well?" she inquired anxiously.

"Look at that," he said, thrusting  
a paper into her hand and turning  
away, so that he might not see her  
face. He need not have been afraid.

Cecil read the marked paragraph,  
"The funeral of Lord Cunningham."

There was also a likeness of the heir,  
and it and the man sitting beside her  
were identical.

Mrs. Ranter was considerably  
astonished the next morning to get a  
letter in the ex-violin master's hand-  
writing.

"Lord Cunningham regrets that he  
will be unable to continue Mrs. Ran-  
ter's lessons, as he is leaving Leomin-  
ster."

Still more surprised was she at the  
announcement of his engagement to  
Cecil Carwithen, which her daughters  
read out of the local papers a few  
mornings later.

"Girls!" she said to those two young  
ladies, "why didn't we ask him to din-  
ner?"

And echo answered "Why?"—St.  
Paul Budget.

## Talking Birds.

It is not a little singular that whilst  
the so-called dumb animals have all  
some language of their own, a method  
by which each species can hold converse  
with its kind, it is in the feathered  
world alone that we find any creatures  
capable of being taught to use the  
speech of man. Certain birds not only  
are capable of producing articulate  
words and sentences, but it would ap-  
pear from many well-authenticated in-  
stances as if they possess in some  
measure the reasoning faculty which  
enables them to apply their acquired  
art of speech with peculiar aptitude.

The raven, the jackdaw, the magpie  
and the jay may all be trained to im-  
itate sounds and to utter words and  
even sentences, distinctly, but more  
familiar to most people are talking  
birds of the parrot tribe, which acquire  
the gift of speech in far greater perfec-  
tion than any other of their species.  
The voice of the parrot is also much  
more human in its tones; the raven is  
too hoarse, the jay and the magpie are  
too shrill; but there are modulations in  
the parrot's notes when speaking that

are sometimes absolutely uncanny in  
their weird resemblance to the "hu-  
man voice divine." This superiority is  
due to the construction of its beak, its  
tongue and head. The parrot, too, has  
a wonderful memory and rarely forgets  
what it has once thoroughly learned.—  
Our Young Folk.

## Language of Crows and Fowl.

"Of all the birds of the air," said the  
game-keeper of the Massachusetts  
Sportsmen's Association, "I think  
crows are the greatest conversation-  
alists."

"Do you mean that crows and other  
birds have a language?" he was asked.

"I do, and if ever you study these  
black freebooters when looting in a  
grain field, I dare say you will think as  
I do. They never attempt to do busi-  
ness in a field of corn without first  
establishing a system of outposts. If  
one sentinel can overlook the surround-  
ing country only one will be posted;  
but if circumstances require more than  
one the necessary number will be as-  
signed to duty."

"These sentinels reconnoitre for the  
best positions for outlook, and settle  
down to watch. If one sights a man  
approaching without a gun, a rather  
lazy, indifferent 'caw' is sounded, and  
the looters in the grain or corn take  
their time in winging away. But mark  
the difference when a watcher sees a  
gun. Then there is an unmistakable  
emphasis added to the danger signal,  
and there is no loitering among the  
robbers this time. All are in a hurry,  
and every one in the bunch seems to  
have something to say."

Turning to the partridge and quail  
and several varieties of water fowl,  
which will be exhibited in Mechanics'  
building next month, the game-keeper  
continued:

"Did you ever hear an old biddy  
partridge tell her chickens to get un-  
der cover? Never! Well, she says it  
in very few words when surprised with  
her brood, and the little fellows disap-  
pear on the instant. While you are  
wondering what became of them she  
begins to fake lameness and tries to in-  
duce you to catch her. If you are not  
up to her tricks you give chase, and  
when she has led you far enough away  
from her hiding chicks she'll likely  
startle you with a sudden thunder of  
wings, and a burst of speed that will  
leave you standing wide-eyed with  
wonder."

"Retrace your steps to the place  
whence she coaxed you, and sit down,  
keep quiet, wait. The mother bird will  
return in a few minutes, settle down  
noiselessly and cluck. The note this  
time differs from that given when she  
saw you, and directly she sounds it all  
the little chicks bob up from under  
leaves and out of odd hiding places and  
chase around with the old biddy after  
food."

"Ducks and geese talk. There is no  
doubt of it, and if ever you saw an old  
gander entreating a flock of young and  
inexperienced goslings to heed not the  
wheeling honks of the Cape Cod decoys,  
you would be convinced. An English  
scientist named Nelson Wood, who has  
made a lifelong study of bird language,  
is competent to understand many bird  
signals and to give them himself. Birds  
that do not fly and consequently are in  
greater danger have a more extended  
vocabulary. Turkeys and barnyard  
hens have a note for overhead danger,  
as when a hawk appears, and another  
for danger on the ground."

"WHERE did all those skeletons come  
from?" asked the visitor at the medical  
college. "Can you keep a secret?"  
queried the medical student. "Sure  
thing," replied the visitor. "Then I'll  
tell you," replied the embryo M. D., and  
continued in a loud whisper, "we raised  
them."

"Isn't it silly for a woman to refer to  
her new hat as a 'duck of a bonnet?'"  
"That's appropriate enough. A duck  
has a pretty big bill attached to it, you  
know."

"SOME MEN," said Uncle Eph'm, "is  
like fish. Dey don't never come to the  
top ontell dey die."



## Eighty Miles of Free Fruits.

Mr. Samuel W. Allerton, the Chicago millionaire, enjoys the reputation of owning a larger number of farms than any other man in the country. His agricultural holdings comprise thousands of acres of the richest soil in the prairie States. Although his farming is pre-eminently of the practical kind which yields great profits, in one way he allows sentiment to govern him. Along the roads which skirt and traverse his farms are belts of cherry and apple orchards. If these trees were planted in a single file, as close together as good results in bearing would permit, the line would reach 80 miles in length. The incident which accounts for the large number of these trees, and the fact that they are set so close to the public highway, is of peculiar interest.

When Mr. Allerton was a boy of 12 years, his chief source of income was from driving herds of sheep and droves of calves to the Poughkeepsie market, a distance of 30 miles. The trip to the city was made in 2 days, and he was generally able to get a ride home with some farmers from his neighborhood who had been to market with produce. The bright spots in the pilgrimage, from the viewpoint of the dusty, bare-foot drover-boy who trudged behind his flocks, were the orchards which were sufficiently near the road for possibilities of free forage, and none of the roadside fruitage was half so tempting to the tired, dust-choked boy as the luscious cherries which dangled from loaded boughs on the farm of an old Quaker, whose place was reached in the heat of the second afternoon of the journey. If convinced that the owner was not near, the boy would make a swift raid upon the trees and then eat the fruit at leisure as he trudged along. And he frequently smiled with great satisfaction at the thought that he had not once been seen by the owner.

When returning one day in the wagon of a farmer, the boy saw the Quaker standing beside his trees. "Don't you suppose he would let us have a few cherries if you were to ask him?" said the boy.

"Of course he would," answered the farmer, who stopped the wagon and laughingly repeated the boy's request to the venerable Friend. The latter looked benevolently serious, placed his hand on the lad's head and inquired calmly:

"Isn't thee the boy that breaks the limbs from my trees?"

There was no way of honorable escape, and Allerton tremblingly admitted the charge.

"Don't thee steal any more," continued the kindly old Quaker, "but just pick thy fill as if thee owned them. Now go and fill thy hat, but do not break the branches."

After telling this story recently to a friend, Mr. Allerton said: "I made up my mind then that when I grew to manhood I would do something to show that I appreciated the lesson that the good old Quaker taught me and the kindness with which it was done. I've planted fully 80 miles of trees to his memory. If he had thrashed me, as I expected him to do when I confessed, there would not have been one of these memorial trees. And the men on my farms understand that any boy is welcome to eat his fill of fruit. That's what the trees are there for."—Saturday Evening Post.

**SENATOR GRAB:** A man called on me this morning and offered me \$1000 for my vote on a certain measure, but I refused it. Political Purist: Bravo! You ought to have the approval of your conscience. Senator Grab: I have; we finally agreed on \$2000.

"Hi, THERE!" called the policeman, "don't you see that sign: 'No dogs allowed in this park?'" "Ah!" replied the dog owner, "but this dog can't read. Fine day, isn't it?"

**SILICUS:** I'm afraid the world has very little sympathy for its unfortunates. Cynicus: Nonsense! Haven't you ever noticed how people cry at weddings?

## Necessity of Foot Baths.

Not only are the feet kept comfortable, but the well being of the entire body depends much upon the time and care bestowed upon the feet.

The feet should be washed daily in tepid water and soap, finishing with a dash of cold water to quicken circulation and prevent their becoming sensitive.

Friction is indispensable to remove tough and callous surfaces and to render the foot soft and flexible. Callosities may be smoothed with toilet pumice stone. They will not occur if the feet are washed daily. The nails should be cut square across top.

If the feet are dry, rub in a little fine toilet cream or vegetable oil until absorbed.

If the feet are moist, rinse in water containing a little powdered alum, vinegar or ammonia. After wiping them perfectly dry, dust on a little talcum powder.

For feet which suffer from excessive perspiration, a little carbolic acid, say twenty or thirty drops in a basin of rinse water, is efficacious. Soda is also excellent to neutralize the acid of the perspiration. The hosiery should be changed daily and the street shoes exchanged for slippers or low shoes when at home.

As a rule, the feet are not sufficiently ventilated, and the large pores of the soles reabsorb much of the impurities which they throw off. A frequent change of shoes and stockings and exposure to the air when possible obviates much of the unpleasant odor consequent upon constant imprisonment of the feet in thick leather.

Half an ounce of borax to a pint and one-half of water makes a good rinsing solution.

Boracic acid in powder form may be dusted on feet which perspire disagreeably, with good results.

## Cute Sayings.

The Little Chronicle has collected and published some of the bright sayings of small folk, from which we take the following story:

Evading a Difficulty.—Alice, who was five years old, was often asked to run errands for her mother. She went very willingly if she could pronounce the name of the article wanted, but she dreaded the laughter which greeted her attempts to pronounce certain words. "Vinegar" was one of the hardest for her. She never would go for it if she could help it; but one morning her mother found it absolutely necessary to send her.

On entering the store she handed the jug to the clerk and said:

"Smell the jug and give me a quart."

## DOMESTIC ECONOMY.

## Hints to Housekeepers.

A delicious savory omelet may be made from a mixture of chopped parsley, onion juice and any savory herbs to sprinkle over the omelet.

To take the "eyes" out of a pineapple, if the proper utensils are not at hand, it will be found that slicing the fruit greatly facilitates the operation. It is easy afterwards to cut off the skin if the pine is to be served in slices, and, obviously, still less difficult, if to cut the fruit into dice is intended.

To prepare "easy" toast, use the end pieces of a loaf of bread. Over them pour quickly boiling water, letting it run off, or pour milk over them. Then slash the pieces, but do not sever the crust, and put butter between, in the cuts and on the top. Set this in the oven in a deep plate, and by the time the table is set and tea or cocoa made, the "easy" toast is done.

A delicious cold dessert, fit for the most distinguished company, is an orange cream. Soak one-half of a box of gelatine in one-half of a cupful of cold water. Beat the yolks of five eggs with one cupful of sugar and the grated rind of one orange until light. Scald one pint of milk, and pour over the egg

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mixture. Return to the double boiler, and stir until as thick as custard. Take from the fire, add the soaked gelatine, and stir until dissolved. Strain, and when cool add the juice of five oranges. When it begins to stiffen add one pint of cream whipped to a solid froth, and stir carefully until very thick. Pour into small moulds or paper cases, and stand in a cold place.

A recipe for cabbage salad, made with celery and whipped cream, is called a German salad, and is put together as follows: One small head of cabbage, one large beet, six hard-boiled eggs. Cut the cabbage as fine as you would for slaw; season with salt and pepper. Place this on a flat dish, pile it quite high, and arrange around with alternating slices of boiled beets and hard-boiled eggs. Garnish the edge thickly with the delicate part of celery curled and the small leaves. Do not stir the mixture with vegetables, and boil the eggs twenty minutes. Whip to a thick froth a pint of rich cream, and pour over the whole.

To make an apple compote take one-half cupful of boiling water, add one cup of sugar, a couple of pieces of stick cinnamon about an inch long, or enough powdered cinnamon to flavor, and the sliced yellow rind of one lemon, and let the whole simmer until it begins to look thick. Pare and core six tart apples, place in a graniteware saucepan, and pour the syrup over them, being sure that each is well covered with the mixture. Cover the saucepan and place it where the contents will simmer slowly. When the apples are soft, remove them carefully, to avoid breaking, and serve on thin rounds of hot toast, on which a little of the syrup may be poured. If served cold, a little whipped cream may be poured over each apple.

An old housekeeper furnishes the following recipe for a pot roast of beef: Place the meat in a mixture of white wine vinegar, a dozen whole allspice, a dozen peppers and a half bay leaf, and leave it two days, turning the meat occasionally; then remove the beef, wipe it dry and brown it on both sides with two sliced onions in veal suet. Put into the kettle in which the meat is to be boiled two cupfuls of spiced vinegar, with two large carrots cut in slices. When it boils add the browned meat, cover closely and cook slowly for three hours, turning occasionally, adding more vinegar as it is needed. Remove the meat; strain the vinegar in which it is cooked, add a cupful of boiling water, and a little salt, and thicken with two tablespoonfuls flour. Add the meat, and just before serving add a cupful of cream.

"JOSIAH," asked Mrs. Chugwater, "what is a bucket-shop?" "It's a place, I suppose," replied Mr. Chugwater, looking impatiently up from his newspaper, "where they empty the water out of the stocks."

"In our last issue," explained the editor of the Hickory Ridge Missourian, "the types made us say that 'the great curse this country ought to pray to be delivered from is its baking powder.' We wrote it 'banking power.'"



## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, June 18, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July.	Sept.
Wednesday.....	72½@71¼	70½@70
Thursday.....	72½@71¼	70½@70¼
Friday.....	72½@71¼	71@70¼
Saturday.....	72½@71¼	71@70¼
Monday.....	71¾@72	70@70¾
Tuesday.....	71¾@72	70@71¼

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday.....	38¼@36½	28¼@28½
Thursday.....	37¾@37¼	28¾@28½
Friday.....	38@37¾	29@28¾
Saturday.....	37¾@37¼	28¾@28½
Monday.....	38¾@37¾	28¾@28½
Tuesday.....	37@37¾	28¾@28½

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	1 11¼@1 11	1 14¼@1 14¼
Friday.....	1 11¼@1 11¼	—@—
Saturday.....	1 11@—	—@—
Monday.....	1 11¼@1 12¼	1 15¼@—
Tuesday.....	1 12¼@1 12¼	1 15@1 14¼
Wednesday.....	1 12@1 12¼	1 14¼@1 15¼

## WHEAT.

There has been a very quiet market for this cereal most of the week under review, with little fluctuation in quotable values, and no radical changes likely to be experienced in the near future. With the new season just opening and shippers and millers carrying light stocks, buyers are naturally bearish in their views. That the wheat crop of the State is not proving heavy is being clearly demonstrated by the movement in grain bags, which is falling far below early expectations. Ships suitable for grain loading are in fair spot supply, and there is a moderately large fleet headed this way. Prospects are that there will be an ample supply of ocean tonnage for all the grain which will be available for shipment this season. Freight rates should be reasonable. Iron ships for wheat cargo to Europe, usual option, are not now quotable over 25 shillings, although some vessels have been chartered to arrive at an advance on above figure. Some wheat is being shipped to South Africa and Australasia, and more is likely to be wanted for above destinations. With moderate inquiry from Europe, no trouble should be experienced in disposing of this season's surplus of California wheat. There will be considerable pressure to realize, however, during the next few months, and there is little likelihood of the market in the early part of the season displaying any special strength. Market closed moderately firm at the quotations.

California Milling.....	1 15@1 17¼
Cal. No. 1 shipping, alongside.....	1 10@1 11¼
Oregon Valley.....	—@—
Washington Blue Stem.....	—@—
Washington Club.....	—@—
Of qualities wheat.....	1 17¼@1 10

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	6s¼d@6s1d	6s3¼d@6s4d
Freight rates.....	37¼@38½s	23¼@25s
Local market.....	97¼@1 00	1 10@1 12¼

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:  
December, 1902, delivery, \$1.11@1.12½.  
May, 1903, delivery, \$1.14½@1.15½.  
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.12@1.12½; May, 1903, \$1.14½@1.15½.

## FLOUR.

In quotable values there are no changes to record, but market is quiet and is not remarkable for firmness. Sales at full current figures are confined principally to favorite marks. Stocks are large enough to accommodate a considerably heavier trade than is being experienced. The outward movement is of fair volume, but is mostly of flour which had been previously contracted for.

Superfine, lower grades.....	\$2 40@2 50
Superfine, good to choice.....	2 60@2 90
Country grades, extras.....	3 15@3 35
Choice and extra choice.....	3 35@3 65
Fancy brands, jobbing.....	3 65@3 75
Oregon, Bakers' extra.....	2 90@3 25
Washington, Bakers' extra.....	2 90@3 40

## BARLEY.

There has been no heavy trading the current week in either new or old barley. Old is being in the main steadily held, with no large stocks of the same, but it has been impossible to secure any great custom at full figures asked. Offerings of new were of fairly liberal volume, mainly by sample for future delivery, and it was difficult to effect transfers at satisfactory prices at full current values. According to samples thus far exhibited, the crop promises to be of very good average as to quality and about the same as last season.

New Barley.....	85@92¼
Feed, No. 1 to choice old.....	92¼@95
Feed, fair to good.....	90@92¼
Brewing, No. 1 to choice.....	1 00@1 02¼
Chevalier, No. 1 to choice.....	—@—
Chevalier, poor to fair.....	—@—

## OATS.

Holders of old are anxious to dispose of stock, and are not hesitating to grant concessions to buyers, especially where transfers of wholesale proportions are under consideration. Heavy receipts of new oats are anticipated in the near future. Offerings of new by sample are now of liberal volume, mainly of Reds and Blacks, market for these varieties showing most inclination at present in favor of buyers.

White Oats, fancy feed.....	1 32¼@1 35
White, good to choice.....	1 27¼@1 30
White, poor to fair.....	1 20@1 25
Gray, common to choice.....	1 15@1 25
Milling.....	1 32¼@1 35
Surprise, good to choice.....	1 35@1 40
Black Russian.....	1 10@1 20
Red.....	1 10@1 25

## CORN.

Asking prices remain close to figures last quoted, but demand is slow and market is not showing any special firmness. Corn is now by long odds the dearest feed cereal on the list, and it would be phenomenal to have an active demand at anything near the values at present prevailing.

Large White, good to choice.....	1 50@1 55
Large Yellow.....	1 45@1 50
Small Yellow.....	1 47¼@1 52¼

## RYE.

The market is not greatly burdened with offerings, but there is enough for the immediate demand. Values remain without quotable improvement.

Good to choice.....	85@90
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## BUCKWHEAT.

Virtually nothing doing at the moment in this cereal. Quotations necessarily represent only nominal values in the absence of any wholesale trading.

Good to choice.....	1 55@1 70
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## BEANS.

There has been slightly increased inquiry for Lady Washington's and Small Whites, with market in consequence a little firmer for these kinds, but no pronounced advance in quotable values. Colored beans other than Pinks and Bayos are in very moderate stock, mostly in the hands of dealers, and it is the exception where these supplies are being crowded to sale at less than full current rates. Pinks are ruling fairly steady. While there are moderate stocks of Bayos, they are principally in hands competent to carry and holders are showing no anxiety. Limas are not being offered very freely, neither is there any active inquiry for them at present in this center.

Pea, fair to good, 100 lbs.....	3 25@3 50
Small White, good to choice.....	2 40@2 55
Lady Washington.....	2 35@2 50
Pinks.....	2 10@2 20
Bayos, good to choice.....	2 90@3 10
Reds.....	2 25@2 75
Red Kidney.....	3 50@3 75
Limas, good to choice.....	3 65@3 75
Black-eye Beans.....	4 90@5 10
Garbanzos, large.....	2 00@2 25
Garbanzos, small.....	1 25@1 50

## DRIED PEAS.

Same inactivity previously noted is still prevailing in this market. There is at this date little other than asking figures upon which to base quotations.

Green Peas, California.....	1 50@2 00
Niles Peas.....	1 75@1 80

## WOOL.

Spot offerings do not include much choice wool, and for this description the market is showing decided steadiness, holders having confidence in the future, and preferring to carry rather than make the concessions necessary at this date to effect a wholesale movement. Defective stock is dragging. Scourers are doing some work and would be doing more were they able to secure the wools at figures warranted by current values East.

## SPRING.

Humboldt and Mendocino.....	16@18
Northern Sacramento Valley, free.....	15@16¼
Northern Cal., defective.....	13@14
Middle County, free.....	13@15
Middle County, defective.....	12@13
Southern, 7 mos.....	9@11
Southern, 12 mos.....	9@10
Foothill.....	11@13

Oregon Valley, fine.....	14@15
Oregon Valley, coarse to medium.....	12@13
Eastern Oregon, choice.....	11@13
Eastern Oregon, fair to good.....	9@10
Nevada, as to condition.....	12@15

## HOPS.

There are not many hops of any sort now in stock in this center, or in fact on the entire coast, in either first or second hands. Dealers are quoting up to 18c for choice of last crop, which is on a parity with current asking rates East, but this figure is practically a jobbing price and would not be obtainable in a regular way on round lots from first hands. Choice new to arrive are quoted at 13@14c, with few offerings. A New York review sums up the situation on the Atlantic side as follows: "A very quiet market is reported again this week, but the small quantity of stock remaining in dealers' hands here and at other points makes a very strong holding. There seems to be a disposition to feed the hops out sparingly in order to get whatever advantage the situation affords, and this is met by a hand-to-mouth policy on the part of brewers. The supply of State hops is particularly short; some dealers are entirely out and those who have a few left ask very full rates for them. We hear of bids of 21c refused for choice, and it is said more money has been obtained on time sales to brewers. A lot of fine Oregons sold on the market at 20c, and that is now an inside rate for the best. Lower grades of both State and Pacific coast are crowding unusually close to the top, and there are very few growths to be had at second and third quotations. Yearlings are practically gone. Old olds command attention and are quite firm; some fair quality Pacifics sold to dealers at 6½c, and the higher grades bring more. The hop yards in this State have not responded to the recent favorable weather as well as was expected and the outlook for the crop is none too good."

## HAY AND STRAW.

Market for hay is easy in tone, unless for strictly choice to select old, this description being in light receipt and in fair request. New hay is not coming forward very freely, but there is enough offering to impart an easy tone to the market, the demand for new not being brisk at present. Sales of new are mostly within range of \$8@9.50 for wheat, \$7.50@8.50 for barley and mixed wheat and oat, and \$7@8 for fair to good volunteer oat.

	NEW.
Wheat, good to choice.....	8 00@9 50
Barley and Oat.....	7 00@8 50
Volunteer Oat.....	6 50@8 00
Alfalfa.....	8 00@9 50

	OLD.
Wheat, good to choice.....	9 00@12 50
Wheat and Oat.....	9 00@11 50
Oat, good to choice.....	8 00@10 00
Barley.....	6 50@9 00
Clover.....	7 00@8 50
Compressed.....	9 00@12 50
Straw, ½ bale.....	40@50

## MILLSTUFFS.

Asking rates for millstuffs have not changed materially since last review, but there is more offering than immediate custom can be found for at full current figures. Prospects are there will be easier prices in the near future. Present supplies are mainly from the North. Market for Rolled Barley and Milled Corn is ruling quiet and is easy in tone.

Bran, ½ ton.....	17 50@18 50
Middlings.....	21 00@23 00
Shorts, Oregon.....	18 50@20 50
Barley, Rolled.....	19 50@20 50
Cornmeal.....	31 00@32 00
Cracked Corn.....	31 50@32 50

## SEEDS.

In the different seeds quoted below there is little doing at present. Stocks and offerings of most kinds are too light to permit of extensive operations. In quotable values there are no changes to record.

	Per ctl.
Flax.....	2 50@2 75
Mustard, Yellow.....	3 50@3 75
Mustard, Trieste.....	3 30@3 60
	Per lb.
Canary.....	3¼@3¾
Rape.....	1¾@1¾
Hemp.....	3¼@3¾

## BAGS AND BAGGING.

There is little improvement to note in quotable values or the general condition of the Grain Bag market. The indications are that there will be no chance for great complaint on the part of consumers about the price of this commodity for some time to come. Other bags and bagging are being held at practically unchanged figures, with trading light.

Calcutta Grain Bags, buyer June-July.....	—@—
Calcutta Grain Bags, spot.....	5¼@6
San Francisco Grain Bags, 22x36, spot.....	5¼@6
San Quentin Bags, ½ 100.....	5 55@—
Wool Sacks, 4 lbs.....	3@36
Wool Sacks, 3½ lbs.....	32@33
Fleece Twine.....	8¼@—
Gunnies.....	—@—
Bean Bags.....	5¼@5¾

Fruit Sacks, cotton, three sizes.....	5¼, 6, 6¼
Fruit Sacks, Jute.....	7@7¼

## HIDES, PELTS AND TALLOW.

Market is firm for Hides at the figures quoted, both for dry and salted stock, with good demand at current rates. Pelts are not in very active request, but previously quoted values are being maintained. Offerings of Tallow are meeting with prompt custom as a rule at full figures, demand being good and market firm.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11@—	9@—
Medium Steers, 48 to 56 lbs.....	10@—	8@—
Light Steers, under 48 lbs.....	9@—	7¼@—
Heavy Cow Hides, over 50 lbs.....	9@—	7¼@—
Light Cow Hides, under 50 lbs.....	9@—	7¼@—
Stags.....	6½@—	—@—
Wet Salted Kip.....	8@—	7@—
Wet Salted Veal.....	9@—	8@—
Wet Salted Calf.....	10@—	9@—
Dry Hides.....	16@—	14@—
Dry Kip and Veal, 11 to 16 lbs.....	13@—	11@—
Dry Calf, under 4 lbs.....	17@—	15@—
Salted Horse Hides, large.....	2 75@—	—@—
Salted Horse Hides, medium.....	2 25@—	2 50@—
Salted Horse Hides, small.....	1 25@—	—@—
Dry Horse Hides, large.....	1 75@—	—@—
Dry Horse Hides, medium.....	1 50@—	—@—
Dry Horse Hides, small.....	1 00@—	—@—
Dry Colts' Hides.....	50@—	—@—
Pelts, long wool, ½ skin.....	80@—	1 20@—
Pelts, medium, ½ skin.....	50@—	75@—
Pelts, short wool, ½ skin.....	30@—	40@—
Pelts, shearling, ½ skin.....	15@—	30@—
Deer Skins, best summer.....	35@—	—@—
Deer Skins, good medium.....	—@—	30@—
Deer Skins, thin winter.....	—@—	20@—
Elk Hides.....	10@—	12@—
Tallow, good quality.....	5¼@—	—@—
Tallow, No. 2.....	4¼@—	4¾@—
Goat Skins, perfect.....	30@—	37¼@—
Goat Skins, small.....	10@—	20@—
Kid Skins.....	5@—	10@—

## HONEY.

Stocks in this center are not large of any description. Supplies of old have been reduced to small compass, and not much new has yet arrived. Market is showing a firm tone, especially for high grade product.

Extracted, White Liquid.....	5@—
Extracted, Light Amber.....	4¼@—
Extracted, Amber.....	4@—
White Comb, 1 lb frames.....	10@12
Amber Comb.....	7@10
Dark Comb.....	6@7

## BEESWAX.

Values are being well maintained at the figures quoted. There is no lack of demand. Stocks here or offerings to arrive are of small volume.

Good to choice, light, ½ lb.....	27@29
Dark.....	25@26

## LIVE STOCK AND MEATS.

Beef has been selling at practically unchanged figures, with demand not very active, as is to be expected in the mid-Summer season. Mutton is in ample receipt for current needs, but is not materially lower. Lamb is in moderate supply and fair demand, values ruling steady. Veal is in light stock, and good to choice is salable to fair advantage, market being firm at the quotations. Hogs are in moderate receipt, about sufficient for immediate wants; prices are a little higher than last noted, and will likely continue close to present range for the next few weeks.

Beef, first quality, dressed, net ½ lb.....	7@—
Beef, second quality.....	6¼@7
Beef, third quality.....	6@—
Mutton—ewes, 7¼@8c; wethers.....	8@8¼
Hogs, hard grain fed, 125 to 200 lbs.....	6¼@6½
Hogs, small, fat.....	6¼@6½
Hogs, large, hard, over 200 lbs.....	6¼@6½
Hogs, soft or acorn fed.....	5¼@—
Hogs, country dressed.....	7¼@8
Veal, small, ½ lb.....	8@9¼
Veal, large, ½ lb.....	7@9¼
Lamb, spring, ½ lb.....	9@9¼

## POULTRY.

Market has been dull and lacking in firmness most of the week under review. Retailers in many instances had considerable carry-over stock, and in consequence did very little buying. With many people off on their Summer vacation, and those remaining not using much poultry at this time of year, the prospects are not encouraging for much activity or firmness for the next month or six weeks.

Turkeys, dressed, choice.....	—@—
Turkeys, alive, Hens, ½ lb.....	14@15
Turkeys, alive, Gobblers, ½ lb.....	13@14
Hens, California, ½ dozen.....	4 00@5 00
Roosters, old.....	4 50@5 00
Roosters, young (full-grown).....	6 00@7 50
Fryers.....	3 50@4 50
Broilers, large.....	3 00@3 50
Broilers, small to medium.....	2 00@2 25
Ducks, old, ½ dozen.....	3 50@4 00
Ducks, young, ½ dozen.....	4 50@6 00
Geese, ½ pair.....	1 25@—
Goslings, ½ pair.....	1 25@1 50
Pigeons, old, ½ dozen.....	1 75@—
Pigeons, young.....	1 50@1 75
Hare, Belgian, large, ½ doz.....	4 50@5 00



## BUTTER.

The market has been inclining in favor of buyers, especially for medium grades of fresh, or other than most select qualities and favorite marks going to special custom. There has been more butter coming forward than needed for immediate consumption, and recent asking prices have been above the views of speculative operators or purchasers on cold storage account.

Creamery, extras, # D.....	21 @—
Creamery, firsts.....	20 @—
Dairy, select.....	20 @—
Dairy, firsts.....	19 @—
Mixed store.....	17 @—

## CHEESE.

Business doing is at generally unchanged figures, but there is more domestic product on market than can be accommodated with custom at full current rates. It is not probable, however, that there will be any appreciable declines from existing values. New Eastern cheese is beginning to arrive freely, with market for same temporarily favorable to buyers.

California, fancy flat, new.....	8 1/2 @ 9 1/4
California, good to choice old.....	— @—
California, fair to good.....	— @—
California, "Young Americas".....	8 1/2 @ 10

## EGGS.

Demand has not been brisk, asking prices being in the main too stiff for speculative operations on cold storage account, and no heavy quantities being required for immediate use. The market will likely be of a dragging character during the greater part of the coming month. Stocks in cold storage here are considerably larger than last season, but in the East a heavy shortage is reported.

California, select, large, white and fresh.	19 @20
California, select, irregular color & size.	17 @18
California, good to choice store.....	16 1/2 @17

## VEGETABLES.

Most kinds in season were in fairly good to liberal supply. It was the exception, however, where choice qualities lacked for custom at prevailing values. Onions arrived a little more freely than during part of preceding week, causing market to present an easier tone, but there were no radical declines in quotable rates. Tomatoes were in increased supply and lower, both the home product and importations from Mississippi making a liberal showing. Green Peas were in reduced supply and market was firmer. Green Corn now arriving includes little which can be termed desirable.

Asparagus, # box.....	1 00 @2 00
Beans, Refugee, # D.....	2 1/4 @ 3 1/4
Beans, String, # D.....	1 @ 3
Beans, Wax, # lb.....	1 @ 2 1/4
Cabbage, choice garden, # 100 lbs.....	50 @—
Corn, Green, # doz.....	10 @ 25
Cucumbers, # small box.....	65 @1 00
Egg Plant, # D.....	8 @ 12 1/2
Garlic, # D.....	2 1/4 @ 3 1/4
Onions, Yellow Danver, # cental.....	1 00 @1 25
Onions, New Red, # cental.....	55 @ 65
Peas, Sweet garden, # D.....	1 1/4 @ 2
Peas, good to choice, # sack.....	75 @1 25
Peppers, Green, # D.....	5 @ 8
Rhubarb, # box.....	85 @1 25
Summer Squash, # box.....	40 @ 75
Tomatoes, # box.....	75 @1 25

## POTATOES.

There was no scarcity of offerings of new potatoes, but the quality did not average high. Some were so very ordinary as to be wholly neglected by most buyers. More choice stock than arrived could have been readily placed at prevailing rates. Old were still on market, but were mostly badly sprouted and received little attention.

Burbanks, good to select, # cental.....	1 25 @1 75
Early Rose.....	— @—
Old Burbanks in sacks, # cental.....	80 @1 25
Petaluma and Tomales Burbanks.....	— @—
Sweets, Merced, # cental.....	— @—

## The Fruit Market.

## FRESH FRUITS.

Noteworthy in the receipts of the week was the arrival last Saturday of a crate of Thompson's Seedless Grapes from Indio, Riverside county, which were reported sold at \$5. Ordinarily Arizona is the first in the market, but it did not prove so this year. Another crate of Seedless Grapes from same locality went Monday at \$4, with market since less favorable to sellers and hardly quotable at \$4 per crate at this writing. Nutmeg Melons were on market from Yuma and Indio, and Rocky Ford Cantaloupes from Indio were in fair supply, with prices somewhat irregular, as to size of package and condition of the fruit. A crate of 14 Watermelons, the first of the season, arrived yesterday from Indio. Black Figs from Arizona were in light supply. Apricots were in increased receipt and late varieties showed improved quality, as compared with previous week. Peaches made a fair showing as to quantity, but it was the exception where the quality could be termed choice. Green Apples were in ample stock for the current demand,

which was not brisk, owing to more desirable fruit being abundant and cheap. Cherries arrived rather freely and considerable quantities went to canners, for want of any other outlet. Ordinary qualities of black and white went at low prices, but choice to select sold to comparatively fair advantage. Royal Anne Cherries met with a firm market, there being an active demand for choice of this variety. Berries of most kinds now in season were in sufficiently liberal supply to keep the situation in the main favorable to buyers, although the weakness of the market was confined principally to common qualities rather than on choice to select stock.

Apples, # fancy, 4-tier box.....	— @—
Apples, good to choice, # 50-lb. box.....	— @—
Apples common to fair, # 50-lb. box.....	75 @ 1 25
Apricots, Royal, # crate.....	75 @ 1 00
Apricots, # basket.....	40 @ 75
Cantaloupes, Indio, # crate.....	3 50 @ 4 00
Cherries, Black, # box.....	35 @ 60
Cherries, White, # box.....	25 @ 50
Cherries, Black, in bulk, # lb.....	2 1/4 @ 5
Cherries, White, in bulk, # lb.....	2 @ 3
Cherries, Royal Anne, # box.....	50 @ 75
Cherries, Royal Anne, # D.....	6 @ 7
Blackberries, # crate.....	7 @ 1 00
Raspberries, # crate.....	75 @ 1 00
Currents, # chest.....	2 50 @ 5 00
Gooseberries, common, # drawer.....	25 @ 40
Gooseberries, English, # D.....	4 @ 6
Logan Berries, # chest.....	3 50 @ 0 00
Nutmeg Melons, Arizona, # crate.....	1 25 @ 1 75
Peaches, # box.....	40 @ 1 00
Peaches, # basket.....	40 @ 75
Pears, Madeleine, # D. box.....	25 @ 50
Plums, Cherry, # box.....	25 @ 50
Plums, Clyman, # box.....	40 @ 75
Strawberries, Longworth, # chest.....	8 00 @11 00
Strawberries, Melinda, # chest.....	3 50 @ 6 00

## DRIED FRUITS.

Trading in spot stocks of cured and evaporated fruits is necessarily of light volume, owing to the very limited supplies now on hand. Market has seldom been so closely cleaned up at corresponding date in previous seasons. Apricots are practically all gone. There are very few Apples remaining, either domestic or imported, and these are held at decidedly stiff figures. There are a few Peaches, Plums and Nectarines, and these are moving into consuming channels as rapidly as could be expected, with the slim supplies now remaining and the nearness of the new season. Values for 1901 stock of above kinds are being well maintained at the quoted range. Prunes of last crop are selling at irregular figures and at a wider range of prices than lately current. Santa Claras of 1901 crop are being in the main steadily held, quotations showing no change, but on outside prices of last crop there has been a cut of a quarter of a cent. In the way of speculative dealing in coming crop there is little doing in fruit of any sort. Some orders for new Prunes are reported having been hooked on the 2 1/2 @ 2 3/4 c. basis for the four sizes, the latter figure for Santa Claras, and it is claimed that some San Jose packers have hooked orders for futures on the 2 1/2 c. basis. Talk on new Apricots is at 6 @ 6 1/2 c. in sacks f. o. h., and on new Peaches at 5 @ 5 1/2 c., as to time of delivery. Eastern and European buyers have had so much information lately hurled at them about enormous crops of all kinds of fruits except Pears, that they are timid about contracting, even at the low figures which some packers and speculative operators claim to be willing to short the market on future deliveries of this season's fruit.

## EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	11 1/2 @12
Nectarines, # D.....	5 @ 6
Peaches, unpeeled, choice.....	6 1/2 @ 7 1/2
Peaches, peeled, in boxes.....	12 @14
Plums, Red and Black, pitted.....	5 @ 6
Plums, White and Yellow.....	5 @ 6
Prunes, 4 sizes, in bags, 2 1/2 @ 3 1/4 c; 50-60s, 4 @ 4 1/2 c; 60-70s, 3 1/2 @ 4 c; 70-80s, 3 @ 3 1/4 c; 80-90s, 2 1/2 @ 3 c; 90-100s, 2 c @ 2 1/2 c; these figures for 1901 crop.	

## COMMON SUN-DRIED.

Apples, sliced.....	6 @ 6 1/4
Apples, quartered.....	6 @—
Peaches, unpeeled.....	6 @ 6 1/4
Pears, prime halves.....	5 @ 5 1/4
Plums, unpitted, # D.....	1 1/2 @ 2 1/4

## RAISINS.

The market is quiet at quotably unchanged values and presents no new features. Stocks are mainly in the hands of packers and are not large enough to cause holders any uneasiness.

Following are the prices for 1901 crop in carload lots:

Loose Muscatels—	Per lb.
4-crown.....	5 1/2 @ 6
3-crown.....	5 1/4 @ 6
2-crown.....	5 1/2 @ 5 1/4
Seedless Sultanias.....	— @—
Thompson's Seedless, bleached.....	9 @ 9 1/4
Seeded—	
1-lb. carton.....	7 1/2 @ 8
12-oz. carton.....	6 1/4 @ 6 1/2
London Layers, 20-lb. boxes—	
2-crown.....	— @—
3-crown.....	— @—

## CITRUS FRUITS.

The Orange season is nearly closed. There are not many offerings, neither is

there much call for them, owing to so much other and cheaper fruit being on the market. In a small way, a few Navel and late Valencias of superior quality are bringing comparatively high figures. Lemon market is slightly firmer for choice to select, with some increase in the demand and reduced offerings, but market for common grades shows no appreciable change for the better. Limes are in only moderate stock and market is tolerably firm at the quotations noted.

Oranges—Navels, # box.....	1 50 @4 00
Mediterranean Sweet.....	1 00 @2 50
Valencias, # box.....	1 50 @4 00
Seedlings, # box.....	1 00 @2 50
Tangerine, quarter box.....	— @—
Lemons—California, select, # box.....	3 50 @4 00
California, good to choice.....	2 25 @3 00
California, common to fair.....	1 50 @2 25
Grape Fruit, # box.....	— @—
Limes—Mexican, # box.....	4 50 @5 00

## NUTS.

Stocks of Almonds and Walnuts are down to small proportions and do not admit of other than a very light jobbing trade, which is being transacted within range of quotably unchanged values. There are no evidences of anything of consequence doing in the way of contracting for future deliveries of coming crop.

California Almonds, shelled.....	16 @19
California Almonds, paper shell, # D.....	12 @13
California Almonds, soft shell.....	9 @10
California Almonds, hard shell.....	5 @ 6
Cal. White Walnuts, No. 1 soft shell.....	12 @13
Cal. White Walnuts, No. 2 soft shell.....	10 @11
Cal. White Walnuts, No. 1 hard shell.....	10 @11
Cal. White Walnuts, No. 2 hard shell.....	7 @ 8
Peanuts, California, fair to prime.....	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.....	5 1/2 @ 6

## WINE.

There are no evidences of any business of consequence being transacted at present in the wholesale market. Values remain quotably as last noted, the range on dry wines of last year's vintage being 20 @ 25 c. per gallon, as to quality, quantity and other conditions. There is little or no effort to crowd business on the part of growers or dealers. Receipts of wine at San Francisco in May were 1,770,200 gallons, as against 1,413,300 for corresponding month last year. Shipments from this port in May, exclusive of Hawaiian Islands, were 503,500 gallons and 590 cases, total valuation \$172,300. For corresponding month last year the shipments were 596,600 gallons and 1,050 cases, value \$217,000.

## Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	149,723	6 374,740
Wheat, centals.....	185,683	10,252,719
Barley, centals.....	29,200	6,285,604
Oats, centals.....	10,164	793,861
Corn, centals.....	5,310	146,486
Rye, centals.....	80	271,671
Beans, sacks.....	2,067	704,071
Potatoes, sacks.....	14,662	1,374,923
Onions, sacks.....	2,814	209,091
Hay, tons.....	1,869	141,924
Wool, bales.....	1,195	75,631
Hops, bales.....	—	9,067

## EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, # sacks.....	98,444	4,257,106
Wheat, centals.....	101,537	9,415,398
Barley, centals.....	3,360	4,300,962
Oats, centals.....	165	4,115
Corn, centals.....	194	13,204
Beans, sacks.....	448	25,722
Hay, bales.....	1,977	25,416
Wool, pounds.....	567,631	1,809,485
Hops, pounds.....	150	556,832
Honey, cases.....	—	6,136
Potatoes, pack's.....	801	50,620

## California Dried Fruit at New York.

NEW YORK, June 18—Evaporated apples, common, 7 @ 9 c; prime wire tray, 9 1/2 @ 10 c; choice 10 1/2 @ 10 3/4 c; fancy, 11 @ 12 c.  
California Dried Fruits.—Stocks light and market firm at current rates, with demand fair.  
Prunes, 3 1/2 @ 4 c.  
Apricots, boxed, 10 1/2 @ 14 c; bags, 10 @ 12 c.  
Peaches, unpeeled, 8 1/2 @ 10 1/2 c; peeled, 12 @ 16 c.

Prune Dip.  
"Greenbank" Pure 100% Caustic Potash and 98% Powd. Caustic Soda.

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Send for booklet.

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SINGLE, per package, containing ten or more doses, according to age of animals.....	\$1 25
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STRINGS, per package of 10 doses, including needle.....	1 25
Per package of 15 doses, including needle.....	1 75
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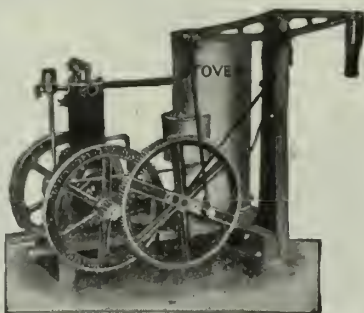


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## ENTOMOLOGICAL.

### The Woolly Aphis and Its Repression.

From an essay by Horticultural Commissioner C. H. RODGERS at the last meeting of the Pajaro Valley Orchardists' Association.

The woolly aphis is so well known to our orchardists that a description of its appearance is unnecessary. It is present in every apple district on earth and in every orchard in our valley. Its widespread presence in our valley is due to criminal carelessness and greed of the nurserymen and ignorance and indifference on the part of the orchardist.

Some peculiar and erroneous ideas exist regarding this insect. Some of our orchardists believe that it has its origin in the ground and is indigenous to our soil. Others believe that it originates in the sap of the tree and hence its appearance on wounded parts. While oftentimes outside of orchards the plow turns up what at a glance has the appearance of woolly aphis, close inspection will prove that it is not such.

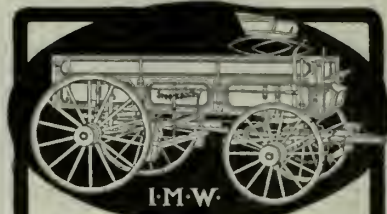
Since its host plant is almost exclusively the apple, although occasionally seen on the pear, it is safe to say that this insect was brought into our valley on nursery stock.

**INJURY DONE.**—The injury caused by this pest is manifold. It punctures root and branch and inserts a poison which causes warty growths or knots, thus interfering with the free flow of sap. It impoverishes the tree by sucking out the life fluid. Each aphis is a minute pump constantly at work. One of the favorite points of attack is at the axil of the leaf and fruit stems. The injury soon becomes apparent at this place by the dropping of leaf and fruit. Oftentimes trees, particularly Bellefleurs, are almost defoliated by these attacks, and the so-called June drop of apples doubtless is largely due to this insect. Both leaf and fruit buds for the following year are formed at the axils of the leaves, and these buds, if not destroyed outright with the leaf, are often so badly injured as not to develop during the following year. It will thus be seen that one severe attack may ruin two crops. Through loss of leaves—the lungs—there is inadequate aeration of the sap or blood of the tree. The result of impoverished, innutritious sap is a sickly tree, producing immature, insipid, unattractive apples. With the two leading varieties of apples grown in this locality, the damage from woolly aphis is greatest to the top of the Bellefleur and to the root of the Newtown Pippin.

The extent of damage to the top has already been explained, and is familiar to many orchardists, but few realize the extent and gravity of root infestation. Here the feeders of the tree are attacked and so crippled and distorted as not to be able to properly perform their functions. The greatest damage wrought, however, is at the crown of the root, just under the surface of the soil. At this point great knotty stools are often formed, entirely circling and sometimes twice the diameter of the stem or trunk. The result of this condition is a strangled, stunted, unprofitable tree.

As an illustration of the extent to which these insects spread underground, the writer has traced them on roots a distance of 25 feet from the tree.

Although a serious menace to our leading industry, by intelligent care the pest may be kept under control. Beneficial insects, together with a cool, moist climate and nearness of the water table to the surface all favor us in withstanding the pest. On account of our cool, moist climate there is but little loss of juices of the tree through evaporation, and for this reason the tree does not suffer from attack as severely as in warm, dry climates. The nearness of water to the surface makes it possible for the tree, through its



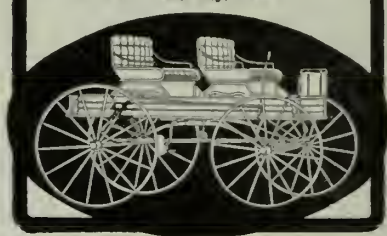
## The Great West

has been made since the first Studebaker wagon was made. Indeed the Studebaker wagon helped to make the West. It has been one of the most efficient aids to the advancement of civilization by making transportation easy for the pioneer. Many of the first men in the West took the Studebaker with them. They are still buying Studebakers, having learned their value by experience. The Studebaker is better to-day than ever before.

Studebakers also make a full line of all kinds of vehicles, harness, etc. They control entire output of the World Buggy Co. and make the "Izzy Lane" of vehicles. All dealers handle Studebaker goods. Write us for catalogues, etc.

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roots, to replenish lost juices much quicker than if it were a great depth to water.

**PREVENTION.**—In setting out an apple orchard, plant only trees grown on resistant roots, if it is possible to procure them. If these cannot be obtained, then plant only clean stock. Upon receiving trees from the nursery, thoroughly wash off all dirt from the roots and dip the whole tree into any good insecticide which kills by contact. As the strongest solutions are not required to kill the aphis, it is advisable to dilute most washes somewhat as a precaution against possible injury to the tree roots. The lime, sulphur and salt wash, lye, kerosene emulsion, strong soap suds, a decoction of tobacco, or any of the proprietary compounds are suitable for this bath.

After planting, keep the aphis off of the young trees by applications of any of the above named insecticides to any colonies that may appear. It seems reasonable to suppose that if this plan is faithfully carried out for the first three or four years the most dangerous points will have become invulnerable, as the bark on the main branches, stem and root crown will have grown so thick and hard as not to be subject to attack.

The insect can be controlled at all times by spraying with proper insecticides, or it can be reduced by water alone, if applied with force.

For root form the following substances are recommended and are to be applied at the base of the tree: Ashes, gas, lime, tobacco, carbon bisulphide, water at a temperature of 150°.

**BENEFICIAL INSECTS.**—By the introduction and protection of aphid-eating insects we can reduce the pest to a minimum. Of this class, the best known and most common are the ladybug, lacewing fly and syrphus fly. There are other insects which probably feed on the aphis. Some of these are under observation and it is hoped that a favorable report may soon be made concerning their value in this respect.

We are not sufficiently familiar with the habits of the lacewing and syrphus flies to know how to give them protection and encourage their multiplication. With the life history of the more common aphid-eating ladybugs, the conver-

Boys fall and bruise themselves. Grown-up athletes sprain muscles by overdoing wholesome exercise. The aches and soreness are taken out with Perry Davis' Painkiller. Rub it well into the throbbing flesh and relief is immediate.



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for restoring normal conditions. Apply to the body as a mild sponge bath and put on light blanket. Sponge the legs and put on light bandages.

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gens and ambiguous, we are more familiar. If properly cared for, these probably increase in sufficient numbers to keep the aphid in check. Contrary to general belief, the ladybug does not hibernate through winter, but remains active and breeds during the whole year if its food is plentiful. During winter and spring, while the aphid is scarce on the trees, the ladybug feeds on a minute insect parasite of burr clover and other native grasses and weeds. If each and all orchardists would plant or leave patches or strips of these grasses through the orchard as a feeding and breeding ground for the ladybugs, the woolly aphid question would, at least, not be as serious as at present.

But, as with all other problems which confront our orchardists, individual effort meets with discouragement, and not until all, realizing the necessity for co-operation, determine to stand together and strike together can we expect to better existing conditions.

### Treatment of the Crown Borer of the Peach.

Mr. J. Luther Bowers of San Jose gives the Mercury his experience with the efficiency of wood ashes as a destroyer of peach root borers.

How THE INSECT GROWS IN CALIFORNIA.—This insect bores into the trunk of all stone fruits of the peach, apricot and plum class, at or near the surface of the ground. No insect of the present day is giving the orchardist as much trouble and causing as many trees to die as the peach borer. In the Eastern States only one brood is hatched during the year. But here in our warm climate, as late as October 1st, larvae can be found in all stages from one-fourth inch to an inch in length, showing very plainly that some three or four broods are hatched out during the summer. Here in Santa Clara valley the eggs are deposited at or near the surface of the ground as early in the season as the middle of April. During the early stages of growth the small borer takes a downward course in the surface of the bark of the root and seldom ever gnaws its way through the bark until it is about one-half of an inch long. Consequently at this stage is the best time to kill and destroy them.

ASHES EFFECTIVE.—Of the many remedies tried I have never found anything so effective as dry unleached ashes. By unleached ashes I mean ashes that have never had a drop of water on them. During the months of June and July with a hoe clean the earth from around the base of the tree to the depth of 4 inches, now pour the ashes around the tree, making a complete band. The quantity to be used is one pint to each 4 inches of diameter of tree; 4 inches or less, one pint; 4 to 8 inches, one quart; 8 to 12 inches, one and one-half quarts, and so on. The ashes must make a complete circle and must be heaped up around the tree as much as possible. As fast as the ashes are placed around the tree the earth should be replaced. If the job has been well done Mr. Borer will never pass the ring of ashes and will perish when he comes to it. The above amount of ashes will make a good job, but more would be better.

AN INSTANCE.—Some years ago the writer had occasion to look over an orchard for borers. This orchard was

a long, narrow strip, and the work was done across the short way. The owner lived in town and every few days would visit the orchard, and each time he came he brought out a box of ashes; he cleaned the earth away from the trees and put a little mound or ring of ashes around each tree as long as they lasted. This was during the months of May, June and July. This was done on one end of the orchard and only on five rows, leaving four rows on each side with no ashes. About twenty-five trees in each of the five rows were so treated. When the work was being done (hunting for borers), it was commenced at the opposite end, and the orchard was found to be badly infested, also a great deal of root knot or root gall; but when the rows having the ashes on were reached not a borer was found, nor was there any green root knot. A great discovery; no borers, no root knot. The root knot was there, but perfectly dead. Each knot could be picked off the root with the fingers, and the roots had healed over and were nice and smooth. But the four rows on each side, how about them? They were as badly infested with borers and root knot as the balance of the orchard, and many barrels and boxes of ashes go to waste in this valley every year. Large piles of brush are burned every year and the ashes are left to go to waste.

After the borer has gnawed through the bark and gotten into the new layer of wood, the ashes will not kill the borer, as the quantity is so small that the leaching or lye would not be strong enough to reach it or effective enough to kill. So this is a case where a preventive is better than a cure.

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven Catarrh to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O. Sold by Druggists, 75c. Hall's Family Pills are the best.



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12 inches long,	\$ 9.00 per 1000.
14 " " "	10.00 " "
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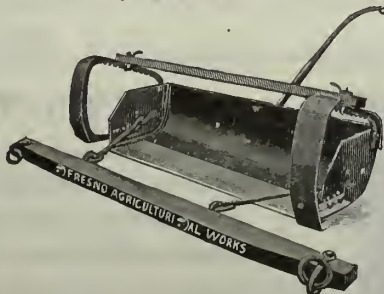
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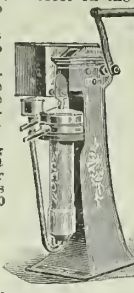
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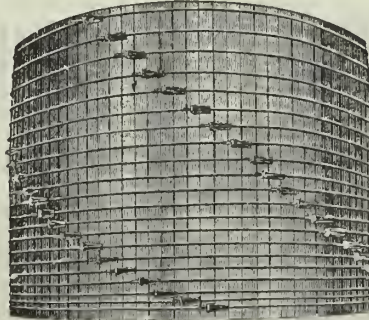
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## Eames Tricycle Co.,

Patentees and Manufacturers of improved designs of Tricycles, Tricycle Chairs for Invalids, and various models of rolling Chairs.

Chairs sold, rented and exchanged.

Illustrated Catalogue mailed on application.

EAMES TRICYCLE CO.,

2020 Market St. San Francisco.





## FRUIT MARKETING.

### The Palermo Lemon Market.

Special report of the Pacific Commercial Museum of San Francisco for the PACIFIC RURAL PRESS.

The present conditions and prospects of the summer lemon crop, in this consular district, seem to be satisfactory. The crop is not so abundant as that of last year, but it is of a superior quality. However, there are plenty of lemons of the 300 and 360 size, which are usually exported to the United States, and if prices at the New York market continue as encouraging as they are at present, they will all be shipped there.

The average prices for good, ripe lemons are now from 15 to 16 lire (\$2.89½ to \$3.088) per 1080 fruits; while Verdelli are sold at from 18 to 20 lire (\$3.47½ to \$3.86). But these prices may naturally increase from day to day, if the export fever will continue as at present. Freight rates to American ports: One shilling (24½c) to 1s. 2d (28½c) per box.

Here is the quantity of green fruit exported to the United States during the month of April, ultimo, with a comparison of the same month last year:

Lemons, boxes.....	239,037	175,318
Lemons, half boxes.....	97,719	681
Oranges, half boxes.....	23,748	6,718

Total packages..... 362,604 182,718

An increase during April, 1902, of 179,787 packages.

JAMES JOHNSON, U. S. Consul.  
Palermo, Italy, May 10.

### MESSINA LEMON MARKET.

The present condition of the summer lemon crop in this district is good, and the prospects are that the yield will be equal to that of last year, but the quality promises to be much better.

The prices paid average about 9 shillings c. i. f. New York, Boston, Philadelphia and Baltimore.

The rates of freight are unchanged—1s 2d, with a rebate of a penny at the end of the season.

CHAS. M. CAUGHY,  
U. S. Consul.  
Messina, Italy, May 18, 1902.

### Winters Enterprises.

TO THE EDITOR:—The building and furnishing of the new warehouse of the Winters Dried Fruit Co. at Winters is nearly completed. The Anderson-Barngrover Co. is furnishing the packing machinery. The building is 150x30 feet on the ground, and about 30 feet to the eaves inside, practically three stories. The Yosolano packing house, which was taken over by the company from Mr. J. L. Harlan, is 72x30 feet, two stories. There is a good supply of skilled white labor to be had in Winters and vicinity, and the new company calculates to be able to store a million pounds of fruit, and to resulphur, process and pack two carloads a day this fall. The Winters Dried Fruit Co., largely composed of growers of fruit in that section, has the only warehouse equipment at Winters, and will undoubtedly operate it much to the benefit of that side of Yolo county.

When Mr. Bird of the A. Bird Canning & Mercantile Co. of St. Joseph, Mo., first came to Winters, some weeks ago, to look over the fruit raising in that section to determine the feasibility of opening a cannery there, he said he doubted if there was fruit enough raised there to keep a cannery running; but after he had ridden through the orchards there for half a day he said he believed enough fruit went to waste to keep a cannery running, to say nothing of the vegetables grown there which might be utilized. F. P. C.

### Crude Oil Smoke for Hoppers.

T. E. Brown of Gartfield has used crude oil to fight grasshoppers after they get their wings. He says the smoke has driven the hoppers away rapidly. He suggests wetting the ground with water and then pouring

on the oil. The moist ground prevents the oil from saturating into the earth, and when burned it makes a dense smoke.

Little aches never grow to be big ones if they are promptly treated with Perry Davis' Painkiller. A good thing to remember in the season of diarrhoea, cholera morbus and other bowel complaints that come with summer.

## Breeders' Directory.

### HORSES AND CATTLE.

**HOLSTEINS**—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr. old classes, except 1st on 2-yr. old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr. olds, 21 Jerseys and Durhams competing. F. H. Burke, 30 Montgomery St., S. F.

**A. J. C. C. JERSEYS.** Service bulls of noted strains Joseph Malliard, San Geronimo, Marin Co., Cal.

**9 SHORT-HORNED DURHAM BULLS FOR SALE.** Address E. S. Driver, Antelope, Cal.

**BULLS**—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

**PETER SAKS & SON,** Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

**J. H. GLIDE,** Sacramento, Cal. Have 70 choice Durham Bulls for sale.

**JERSEYS**—The best A. J. C. C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

### POULTRY.

**WELLINGTON'S IMPROVED EGG FOOD** for poultry. Every grocer and merchant keeps it.

**SANTA TERESA POULTRY FARM,** Eden Vale, Santa Clara Co., Cal. Illustrated catalogue with show record, free. Agents Eclipse Aluminum Leg Bands; sample 2 cts.

**MEAT MEAL.**—Best quality, lowest price. White Leghorn eggs. A. Warren Robinson, Napa, Cal.

**BRONZE TURKEYS.** Ed. Hart, Clements, Cal.

### SWINE.

**POLAND-CHINA PIGS.**—Write us for prices on sows and boar not related. Sweepstakes herd—State Fair. S. P. Lindgren & Sons, Kingsburg, Cal.

**FOR SALE.**—Reg'd Poland-China and Large Eng. Berkshire Pigs, both sexes. Sutton Bros., Lodi.

**J. L. BOURLAND,** Bishop, Inyo Co., Cal. Breeder of choice Thoroughbred Duroc Hogs. Five sows of unrelated families. Breeding stock for sale.

**POLAND-CHINA BOARS.** C. A. Stowe, Stockton.

**P. H. MURPHY,** Perkins, Sac. Co., Cal. Breeder of Shorthorn Cattle and Poland-China Hogs.

**ASHLEY BR. 'S,** Linden, San Joaquin Co., Cal. Breed Poland-China and Berkshire Hogs.

### BREEDERS' SUPPLIES.

**DON'T STOP NOW.** My system of feeding enables you to successfully RAISE CHICKS ALL YEAR ROUND. Write to-day for particulars. Geo. H. Croley, 508 Sacramento St., San Francisco. Cal. Mention Pacific Rural Press.



**OAKLAND Poultry Yards.**  
Breeders of all Leading Varieties of Fowls.  
1317 Castro St.  
**OAKLAND, CAL.**  
Manufacturers of Pacific Incubator and Brooder.  
Send for Catalogue.

## WIRE Cattle Poultry Hog FENCE

Strongest and best Field Fence on the market.  
**WEST COAST WIRE & IRON WORKS,**  
17-19 Fremont Street, San Francisco, Cal.

## Cocoanut Oil Cake.

THE BEST FEED FOR STOCK, CHICKENS AND PIGS.

For sale in lots to suit by

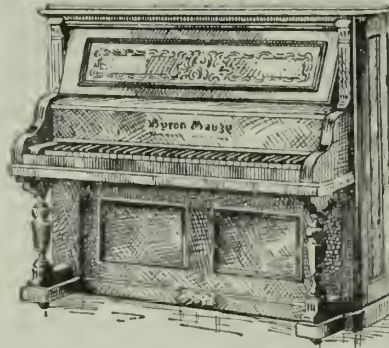
**EL DORADO LINSEED OIL WORKS CO.**  
208 California St., San Francisco, Cal.



**FLEMING'S LUMP JAW CURE**  
Easily and thoroughly cured. New, common-sense method, not expensive. No cure, no pay. FREE. A practical, illustrated treatise on the absolute cure of Lump Jaw, free if you ask for Pamphlet No. 217. Fleming Bros., Chemists, Union Stock Yards, Chicago, Ill.

## FLORISTS and all dealers in ROSE BUSHES

Write to Chase Rose Company, Riverside, Cal.  
FOR WHOLESALE PRICE LIST AND ILLUSTRATED CATALOGUE.



Sohmer  
Byron Mauzy  
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Spielmann } **PIANOS.**

PIPE ORGANS.

**Byron Mauzy,**  
308-310-312 Post St., San Francisco.

WRITE TO OUR MAIL ORDER DEPARTMENT.

## THE NEW CROP

of pigs is coming in good shape and we will soon be able to ship March, April and May litters whose sires and dams carry the blood of the most noted families in this country and England. We can furnish both BERKSHIRES and POLAND-CHINAS, with a large number to select from. Write for what you want and we believe we can please you.

**SESSIONS & CO.,**  
Lynwood Dairy and Stock Farm,  
City Office, 117 East 23rd St., LOS ANGELES, CAL.

## MIDLAND FEED. THE ONLY BALANCED RATION FOR POULTRY IN THE WORLD.

**TEN BRANDS**—Each for a specific purpose. Each one complete in itself—NO ACCESSORIES. Intelligent Feeding of Poultry always returns a profit. Improper feeding does not. It costs no more to feed right than wrong. The nutritive ration must be balanced to meet specific requirements. Our booklet, "The Science of Poultry Feeding," tells you all about it. We will also send you, on request, our booklet "Poultry Fastening Perfected," which describes our new Poultry Crumpling Machine and method of use; also trough feeding, and our special brand of Grenadier Meal: the only Perfect Feed on earth for this purpose sold under a specific guarantee. Write for them at once and get posted. **THE PETALUMA INCUBATOR CO.,** Pacific Coast Agents, PETALUMA, CAL.

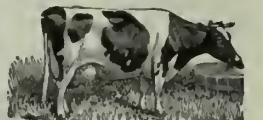
## Emery's Method of Feeding Poultry for Flesh and Eggs.

BOOKLET FREE IN REPLY TO A POSTAL.

**N. OHLANDT & CO.,** Indiana and 24th Sts., San Francisco

## HOLSTEIN CATTLE.

**SLEEPY HOLLOW RANCH, SAN ANSELMO, MARIN CO., CAL.**  
**ALL THE LEADING FAMILIES OF THE BREED.**  
Every Sire directly imported from Herds of the Greatest Eastern Breeders.  
Large Number of Officially Tested Cows. Bull Calves from Great Producing Dams.  
Correspondence and personal inspection invited. **R. M. HOTALING,** 431 Jackson St., San Francisco.



**HUMBOLDT STOCK FARM,**  
JOSEPH MARZEN, PROPRIETOR.  
Breeder of SHORTHORN AND HEREFORD CATTLE.  
Young Stock for Sale. **LOVELOCK, NEVADA.**

## CALIFORNIA VEGETABLES

### GARDEN AND FIELD.

By PROF. E. J. WICKSON, Author of "California Fruits."

The only book published on Vegetable Growing in California.

A MANUAL OF PRACTICE WITH AND WITHOUT IRRIGATION. THE BOOK COMPLETELY COVERS ITS FIELD. A FULL ILLUSTRATED CHAPTER EACH ON

Vegetable Growing in California.	Artichokes.	Peppers.
Farmers' Gardens in California.	Beans.	Potatoes.
California Climate as Related to	Beet.	Radishes.
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Vegetable Soils of California.	Carrot, Parsnip, and Salsify.	Squashes.
Garden Irrigation.	Celery.	Tomato.
Garden Drainage in California.	Chicory.	Turnip.
Cultivation.	Corn.	Vegetable Sundries.
Fertilization.	Cucumber.	Vegetables for Canning and Drying.
Garden Location and Arrangement.	Egg Plant.	Seed Sowing in California.
The Planting Season.	Lettuce.	Garden Protection.
Propagation.	Melons.	Weeds in California.
Asparagus.	Onion Family.	
	Peas.	

Price, \$2.00 Postpaid.

**PACIFIC RURAL PRESS, Publishers,**  
330 Market Street, San Francisco, Cal.

## PATENTS

Obtained in all civilized countries. Expense saved inventors by preliminary searches. Communications confidential.

Inventors' guide free on request. **DEWEY, STRONG & CO.**

(Established 1860), 330 Market Street, San Francisco, Cal.,  
and 918 F Street, Washington, D. C.



## THE APIARY.

### Central California Beekeepers' Association.

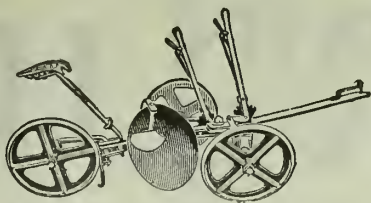
There was a meeting of the Central California Beekeepers' Association in Hanford last week and there were about twenty members present. President Flory was in the chair and called the meeting to order. F. E. Brown, secretary and manager, read a communication from A. J. Cook, of Claremont, Cal., on the subject of bees and pear blight, stating that in his opinion the removal of bees would not remedy the blight, but he is in hopes that there will be a pear district cleared of bees, as this will be the only true test.

Secretary Brown read a draft of an ordinance intended to prevent the importation and delivery of any bees other than queen bees into Kings county without the importations first being inspected and permit granted by the district bee inspector, and making violation of the ordinance a misdemeanor, punishable by a fine of \$500 or imprisonment in the county jail for six months, or by both such fine and imprisonment. The ordinance is designed to prevent the introduction of foul brood and other diseases dangerous to the bee interests.

On motion, the ordinance was accepted, and the president was authorized to appoint a committee of three to present the same to the Board of Supervisors now in session and to urge its adoption. President Flory appointed as such committee Messrs. F. E. Brown, James Griswold and F. M. Hart.

The election of officers was then taken up and the following were chosen for the ensuing term:

Joseph Flory, president; Frank Brown, vice-president; Fred E. Brown, secretary; Henry Crain, treasurer. These with B. P. Shirk and F. M. Hart constitute the executive committee.



The new Benicia-Hancock disc plow put out during the past season proved to be an unqualified success. In view of past failures on the part of Eastern manufacturers, the Benicia Agricultural Works may feel proud of their product. More were sold than anticipated, for the public had begun to think that the disc did not make a good plow. It is safe to assert that no disc plow can be a success unless made under the Hancock patents, which have just been sustained in an injunction suit brought against an imitator. Baker & Hamilton have established agencies over the greater part of several States. Write them at San Francisco, Cal., for particulars.

### New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING JUNE 3, 1902.  
701,281.—STARTING MECHANISM—G. M. Brous, Houlton, Or.  
701,547.—WELL BORER—J. T. Davis, S. F.  
701,555.—FRUIT ELEVATOR—W. M. Ewing, Fresno, Cal.  
701,318.—ARTIFICIAL LIMB—I. R. & W. D. Fenner, S. F.  
701,700.—FILING SAWS—J. H. L. & G. A. W. Folkers, Oakland, Cal.  
701,703.—HOSE COUPLING—C. Frankish, Ontario, Cal.  
701,335.—BUNG AND FAUCET—L. H. Handy, S. F.  
701,483.—FIRE ESCAPE—R. B. Hemming, Oakland, Cal.  
701,571.—SHIFTING TOPSAIL—A. Keegan, S. F.  
701,589.—CAN HEADING MACHINE—A. W. Livingston, Alameda, Cal.  
701,503.—BLOCK SCRAPER—B. I. Plummer, Grants Pass, Or.  
701,614.—VEHICLE ST RM APRON—W. G. Reese, Oakland, Cal.  
701,632.—COFFEE FILTER—A. F. Shriver, Arbuckle, Cal.  
701,518.—FEED WATER HEATER—F. W. Shupert, Spokane, Wash.  
701,432.—EGG BEATER—E. L. Weed, Baker City, Or.  
701,783.—TELEPHONE CALL—Williams, Ingram & Wilson, Walla Walla, Wash.

### Petaluma Incubator Company.

We are interested in the statement in the Petaluma Argus concerning the business firm named above. It seems that the manufacture of incubators and brooders, and sale of all things pertaining to the poultry business, has been conducted in Petaluma since 1879 under the name and title of "Petaluma Incubator Co.," although L. C. Byce has been the only interested person, financially, in the business. From now on there will be associated with him a number of the office and factory employees, who have been with him from four to thirteen years. This is in line with the plans adopted by many of the largest and most successful manufacturers of the world, and in this act Mr. Byce has paid a very high compliment to the business and mechanical abilities and moral standard of those whom he has chosen to associate with him. The Argus adds: "Mr. Byce has filled a station in life that entitles him to be ranked with the leading business men of our country, and is one of the big-hearted, level-headed and efficient members of the community."

## Dividend Notice.

### CALIFORNIA SAFE DEPOSIT AND TRUST COMPANY.

#### CORNER CALIFORNIA AND MONTGOMERY STS.

For the six months ending June 30, 1902, dividends have been declared on deposits in the savings department of this Company, as follows: On term deposits at the rate of 3 6-10 per cent per annum, and on ordinary deposits at the rate of 3 per cent per annum, free of taxes and payable on and after Tuesday, July 1, 1902. Dividends uncalled for are added to the principal after July 1, 1902.  
J. DALZELL BROWN, Manager.

## Dividend Notice.

### The German Savings and Loan Society,

526 CALIFORNIA STREET.

For the half year ending with June 30, 1902, a dividend has been declared at the rate of three (3) per cent per annum on all deposits, free of taxes, payable on and after Tuesday, July 1, 1902.

GEORGE TOURNEY, Secretary.

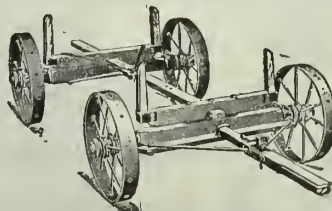
## Dividend Notice.

### San Francisco Savings Union,

532 CALIFORNIA STREET, Corner of Webb.

For the half year ending with the 30th of June, 1902, a dividend has been declared at the rate per annum of three and forty-two one-hundredths (3 42-100) per cent on term deposits, and three (3) per cent on ordinary deposits, free of taxes, payable on and after Tuesday, July 1, 1902.

LOVELL WHITE, Cashier.



3 1/2" Thimble Skein. Warranted to Carry 4000 Lbs. Wheels 28" and 30" x 4".

ORDER AT ONCE AND YOU CAN HAVE ONE OF THEM FOR \$30.00.

ALLISON, NEFF & CO., San Francisco, Cal.

## R·I·P·A·N·S

There is scarcely any condition of ill-health that is not benefited by the occasional use of a R·I·P·A·N·S Tabule. For sale by Druggists. The Five-Cent packet is enough for an ordinary occasion. The family bottle, 60 cents, contains a supply for a year.

1. \$2200 buys 65 acres choice sandy land, on railroad, 6 miles from Merced. Cal. Depot on land. Don't wait for your hat if you want a bargain.  
2. \$1800 buys nicely improved 10-acre ranch with plenty of fruit and free water, only 4 miles from Merced.  
3. 9-acre ranch, nicely improved, very rich land, only 1 mile from town. Price low for quick sale. Address E. M. MILLS, Merced, Cal.

1. 80 acres, Placer Co., Calif., \$800.  
2. 160 acres, Placer and Nevada Cos., \$1600.  
3. 608 acres, Nevada Co., adjoining No. 2, \$7,256.  
4. 120 acres, Nevada Co., near Nos. 2 and 3, \$1200.  
All the above tracts are well wooded and watered; is a deep red soil suitable for fruit, and is in the thermal belt. R. R. station within 3 miles of each tract.  
5. 300 acres, Solano Co., Calif., \$9000. Fenced. Adobe farming land. 3 miles from Sacramento river landing.  
Address ALVIN EGBERT, Rio Vista, Cal.

## FOR SALE.

### 80 Acres All Rich Valley Land.

Good house of seven rooms and bath, and other buildings. Located one mile from St. Helena, Napa Co., near school and R. R. station. Price reasonable. Address H. J. LEWELLING, St. Helena, Cal.

## GLENN RANCH,

Glenn County, :::: California.

## FOR SALE

### In Subdivisions.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

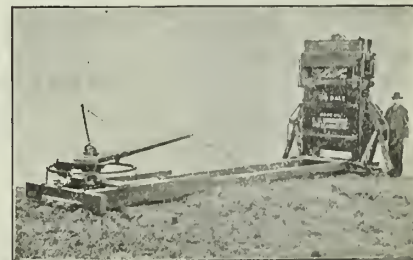
The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

### F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

## JUNIOR MONARCH HAY PRESSES.



Standard and 3/4 Bale Sizes. Manufactured and for Sale by

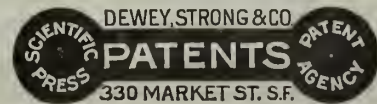
### L. C. MOREHOUSE.

WM. H. GRAY, Agent, San Leandro, Cal.

School of Practical, Civil, Mechanical, Electrical and Mining Engineering, Surveying, Architecture, Drawing and Assaying. 113 PULTON ST., one block west of City Hall, SAN FRANCISCO, CAL.

Open All Year. : A. VAN DER NAILLEN, Pres't. Assaying of Ores, \$25; Bullion and Chlorination Assay, \$25; Blowpipe Assay, \$10. Full course of assaying, \$50. Established 1864. Send for Circular.

Telephone Main 199. Blake, Moffitt & Towne DEALERS IN PAPER, Nos. 55-57-59-61 First St., San Francisco, Cal. BLAKE, MOFFITT & TOWNE, Los Angeles. BLAKE, MOFFITT & TOWNE, Portland Or.



### Gold Medal Citrus Trees.

At the Pan-American Exposition at Buffalo, R. M. Teague, of the San Dimas Citrus Nurseries, with his fine exhibit won the medal for high-grade citrus fruit trees. Mr. Teague reports his trees finding ready sale in Cuba, the Hawaiian Islands, Australia, Old Mexico and the

South American Republics. He issues a booklet giving information necessary to the planting, cultivation, harvesting and packing of oranges and lemons, which he will send to interested parties. A note addressed R. M. Teague, San Dimas, Cal., will elicit a prompt response. An engraving of the award to Mr. Teague appears herewith.

IF YOU ASK YOUR NURSERYMAN

## HOW TO PLANT AND PRUNE THE TREES YOU BUY, HE WILL SAY:

"Get Wickson's CALIFORNIA FRUITS AND HOW TO GROW THEM."

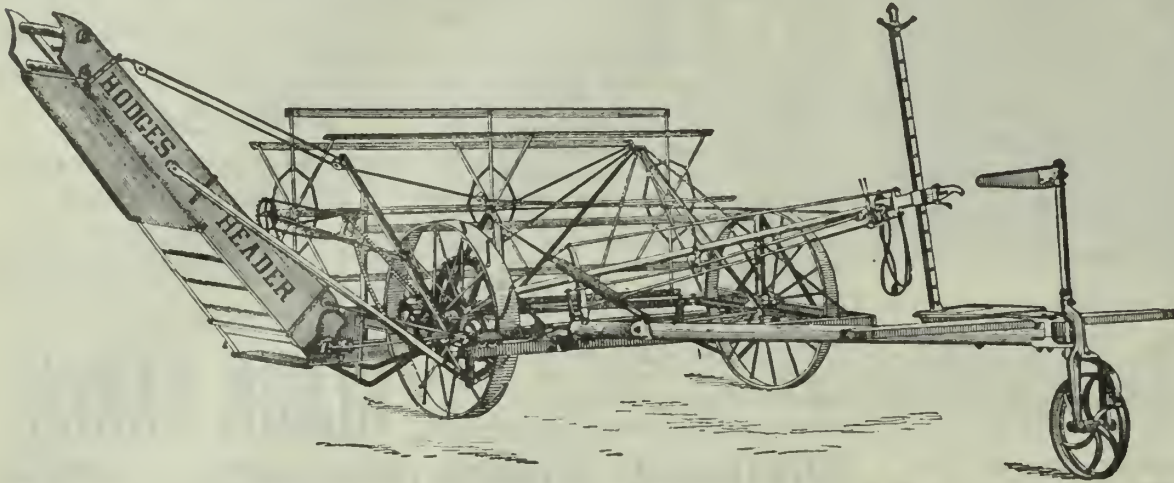
Third Edition. 470 pages, fully illustrated. Price \$2.50, postpaid anywhere.

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# Hodges' CHAIN DRIVE Header.

Correct in Principle, Correct in Form, and in the Detail of Its Construction.



Forty-Inch  
Platform

Forty-Inch  
Spout Ten  
Feet Long

Double Drapers

Steel Frame

One of the principal reasons for the success of the HODGES HEADER is that for years the factory devoted their entire attention to this one machine. This is the forty-second year they have been built, and the machine of to-day combines all the improvements which past experience has proved to be the best. \*

The general construction of the HODGES is very different from many of the other Headers. The main frame is so designed that it almost balances the platform, while on other machines this main frame is entirely wanting. The tiller or steer wheel is bored to perfectly fit the shaft and is provided with two 1/2-inch set screws, making it impossible for the wheel to rock on its axle under the most severe strain. \*

## DEERE IMPLEMENT COMPANY.

Three feeds to the round, one-third faster than the two-stroke presses. Easy draft on team.  
Three men and one team can put up 400 bales per day.  
The third stroke is clear gain and all profit and this alone will pay for the press in one year.  
Three feeds to the round puts up smooth, square end, solid bales. Full weight in smallest car.

**3 FEEDS TO THE ROUND** **SELF FEEDER** **2 TONS TO THE HOUR**  
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WRITE TODAY FOR OUR FREE CATALOGUE

Self-Feeder does away with deadly and dangerous foot feeding. It packs the hay in baling chamber. Self-Feeder does all the heavy work. A boy can tend the feeder.  
Automatic whip drives the team and saves a hand. It whips up either horse.  
Our plan: We will ship on trial and approval anywhere. Your money back, if you want it, after trial.

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Thousands in use on the Pacific coast, and all giving excellent satisfaction.  
They are heavy, strong and durable; will run in light winds and govern themselves in storms.

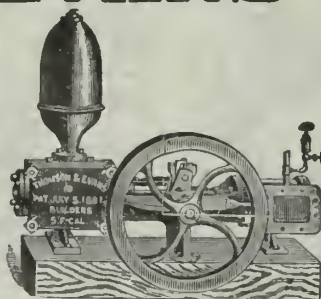
### "HOOSIER" Pumps, REDWOOD TANKS, WATER SUPPLY GOODS.

For particulars, see local agent or address  
**PACIFIC PUMP & WINDMILL CO.,**  
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### C. H. EVANS & CO., Machine Works.

Thomson & Evans  
Steam Pumps.

DEEP WELL  
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POWER PUMPS.



MARINE ENGINES.

SHIP and STEAMBOAT  
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PIPE CUTTING, Etc.

183-185-187 Fremont St.  
SAN FRANCISCO.

Pick your CHERRIES, PLUMS and PEACHES with the  
**LIGHTNING FRUIT PICKING BUCKET.**

IT IS A TIME SAVER. At least one-third more fruit can be picked with the Lightning Bucket than any other way. SO DURABLE WILL LAST A LIFE TIME.

PRICES: EACH, \$1.25; THREE FOR \$3.50; SIX FOR \$6.75; PER DOZ. \$13.00.  
For Sale by LOOMIS FRUIT COMPANY, LOOMIS, PLACER CO., CAL.



### KROGH CENTRIFUGAL PUMPS

for IRRIGATION, RECLAMATION and WATER WORKS.

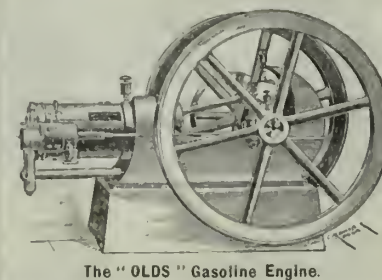
Capacity up to 100,000 gallons per minute.

They are made Horizontal and Vertical and Direct Connected to Steam or Electric Power. Our Pumps have given the highest efficiencies ever recorded.

IN USE ALL OVER THE PACIFIC STATES.

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The "OLDS" Gasoline Engine.

Economical, Durable and Simple.  
1 TO 50 HORSE POWER.

**SPECIAL 3 H. P. Gasoline Engine, \$150**

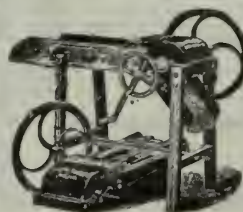
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**JACKSON  
Centrifugal Pumps.**

**BYRON JACKSON MACHINE WORKS**

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**BAKER & HAMILTON, San Francisco, Cal.**



# THE PACIFIC RURAL PRESS

## AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIII. No. 26.

SAN FRANCISCO, SATURDAY, JUNE 28, 1902.

THIRTY-FIRST YEAR.  
Office, 330 Market St.

### In the San Joaquin.

On this page we have other pictures of the San Joaquin valley. Though they differ from all of the many views we have given of the valley scenes, they have this in common with them all, and that is their suggestion of distance, of boundless expanse, and of unlimited opportunity to add acre to acre and to pass beyond the curtain of the horizon without meeting natural barrier or obstacle. Of course, the great mountain ranges of California edge the valley on the east and west, but it requires a clear day to lift the haze from their distant summits. The pictures are illustrative of the extension of the fruit interests of the valley and the diversification of them, for these are not the fruits which one hears most about from the San Joaquin, nor the ones which have proved most profitable, for they show what diverse lines people have taken up in planting.

The San Joaquin valley has during the last two years advanced in population and development more rapidly than any other district of the State, and it is likely to hold the lead for some time to come, unless other districts show more wakefulness than can now be seen in them.

Much has been written of the San Joaquin and its outlook. A sketch by Mr. A. J. Wells in the *Sunset Magazine* for March last draws a very striking comparison between the Nile valley of the East and of the West, and prophesies that the latter will be the greater. His words are for the encouragement of the people and can not be too widely read. Speaking first of the great irrigation works which England is now promoting in Egypt, Mr. Wells continues his discourse by pointing out the fact that a world is watching the English enterprise in Egypt chiefly because the world is at the opening of a new era in agriculture, and the bottom industry of society is to be freed from the harassing element of uncertainty which has been its bane. We are in the dawn of the irrigation age, and especially to us of the West and Southwest is England's success in Egypt an object lesson which we cannot put aside.

Here is the great sea valley of California, and



A Young Grove of Chestnuts in the San Joaquin.

there is the valley of the Nile. That is ancient; this is modern. That is sown with forgotten generations; this is virgin soil, still gay with the wild flowers of its youth. There the old and the new civilizations meet, and the regeneration of the country through its agriculture is begun; here the methods of to-day wait to renew the wealth and increase the population of a valley that will one day be as famous as the valley of the Nile, and will maintain, in latter-day comfort, as dense a population. Here is the same beneficent climate, the same yellow sunshine, the same cloudless sky—a summer air drier than Egypt's and a lower range of temperature; a winter

season as full of plant-building sunshine and with a greater rainfall; the same inexhaustible soil; the same "black land," rich with the spoil of an ancient sea, and rich with the fertility of the encompassing mountains.

This valley of the West is watered as Eden was—by fine rivers. Its skies are as fair, its air as genial, its vast, fertile expanse as inviting to the home builder as that ancient home of the race, the valley of the Euphrates, or as the valley of the Nile; yet, after fifty years, it holds but a sparse population.

Nowhere on the planet is there to-day such a combination of rich, broad acres and radiant skies, of fertile soil and genial climate; nowhere an unoccupied valley offering such attractions to the farmer and fruit grower. It has not a tithe of the disadvantages of Egypt; its climate is better than that of the south of France, more equable and comfortable than that of the famed Riviera. It is not hedged about by a desert, as Damascus is. Mountains of snow make its "streams like Lebanon;" forests of pine and cedar look down upon it and breathe their balsam through the air; iodines from the sea are wafted over it. Yet its growth is not satisfactory. The dispassionate, philosophic, historic mind, recalling its promise a quarter of a century ago, will confess to a feeling of disappointment. Are not the reasons "writ large"—the vast land holdings and the uncertain rainfall? The former are disappearing; the latter is in a fair way to be eliminated as a factor in the farmer's life by the irrigating ditch.

But we must learn by heart the lesson England is teaching the West in the land of the Pharaohs; and when we have followed her example and provided for a fairer valley an equally wise irrigation system, safeguarded by ample drainage canals—when we have attacked the problem not by piecemeal but as a whole—then the fame of our great sea valley will eclipse that of the Nile. When these great, level plains are full of homes, embowered in trees, teeming with abundance, and all the landscape shining with its silver lines of water, seen against the purple of the tranquil mountains, the matchless beauty of this inland empire will be equaled only by the opulence of its happy inhabitants.



An Olive Orchard in the San Joaquin Valley.



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E. J. WICKSON. Horticultural Editor

San Francisco, June 28, 1902.

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## The Week.

In our corner of the journalistic world the greatest event of the week is the closing of the 63rd volume of the PACIFIC RURAL PRESS with the present issue. The volume is above the normal in number of pages, and the effort to faithfully serve our consistency in these active times of California agriculture has required unusual attention and application. We are glad to know, from many and frank declarations from our subscribers, that the PACIFIC RURAL PRESS is widely conceded to stand in the van of agricultural journalism on this hemisphere and to hold a clear leadership in its line of work west of the Rocky mountains. This belief, attested by the coin which our multitude of subscribers invest as a pledge of their convictions, is a constant incitement to good, faithful, accurate and conscientious work. Work thus invited never becomes wearisome; there is such life and satisfaction in it that its duties do not stale nor its requirements seem too great. The index sheet which appears in this issue is a good showing of the width and detail of the knowledge we have set forth, and it makes available all this practical knowledge to readers who keep the weekly issues, as they certainly should. There is nothing at all to compare with the bound files of the PACIFIC RURAL PRESS as an encyclopedia of California agricultural and horticultural practice and progress, and a subscriber who does not preserve his files loses a great part of the enduring value which is rendered him for his annual subscriptions. Effort now turns to the beginning of another volume. Readers may reasonably expect that it will be better than ever.

Wheat is very quiet, but firm. Quotable values have been marked up 25@50 cents per ton, latter figures on choice milling. There have been no cargo clearances of either wheat or barley the current week. Barley is in fair demand, both on foreign and local account, and values are ruling steady. Oats are dull at last quoted decline. Nothing new in corn or the minor cereals. Beans steadily held, but dull. Mill offal and ground feed of all kinds remain as before. Hay is moving slowly, with market easy for new and firm for best old. Values for live stock and meats of all kinds remain in same position as a week ago, with trade very light. Butter market is slow and weak at quotably unchanged values. Cheese is not offering freely and market is inclining against buyers. Eggs are dragging and lower. Poultry is in light request and market lacks firmness. New potatoes have been doing a little better. Onions were not in excessive receipt. Deciduous fruits and berries are in heavy receipt and all changes in prices are to lower levels.

Navel oranges are out and others will soon follow. The last quoted advance on lemons was not maintained. Limes are being firmly held. Old dried fruit nearly all gone. Samples of new apricots arriving, but no prices yet fixed except speculative ones for futures. Wool is in good request and market firm. In hops nothing of consequence doing; ditto in honey.

Deep sadness rounds the world because the shadow of death hangs over the new king of England, who was to be crowned Edward VII on Thursday of this week. As we go to press (on Wednesday) there is no assurance that he will recover from a serious operation that he was obliged to undergo to check an internal disease which has been some time in progress. No matter what one may like or dislike in an English monarch as such, there can be throughout the world but one sentiment of admiration for the man who, knowing that this issue was approaching him, has lessened his hope of recovery in order that the people might not be disappointed and lose the vast amount of time and money which they have lavished in preparations for the grand pageant of the coronation. But the disease would not be stayed and the surgeon's knife has cut out the coronation and placed the sufferer on a narrow line between life and death. The course of affairs has dealt unkindly with the monarch. Forbidden by filial affection to look towards a crown which in the ordinary course of human life should have been his years ago, he comes to advanced age only to find that the crown eludes his grasp because of the weakness of the flesh. His heroism in the thought of others, rather than of himself in the present issue, will do him honor.

An illustration of the value of local organization of growers and their direct connection with dealers in consuming markets comes from Winters, where last year a number of growers and driers of dried peaches formed a pool covering practically all the first-class product in that line, with a view to selling it "in block" at a slight advance over the going figure being paid by buyers. When offered to the local representative of a prominent San Francisco firm doing Eastern business at 6½ cents per pound, it was refused; but when offered direct by telegraph to a prominent New York firm at the same figure, free on board the cars at Winters, the whole block of 175 tons was taken without hesitation and paid for satisfactorily.

The German association of alcohol manufacturers and the association of agriculturists have jointly offered a prize of \$7,143 for the best method of drying potatoes for feed for cattle, etc. German agriculture has been increasing its potato crop very largely. The technical progress made in cultivating potatoes, and the choice of certain kinds yielding a larger crop, have made it apparent that Germany will continue to have a surplus of this vegetable. Already 40% of the total crop is used as fodder; but as potatoes deteriorate after six or seven months, they must be fed within that time. Transportation, also, is expensive, on account of the large percentage of water they contain. Three and one-half tons of fresh potatoes yield one ton of dried ones.

In the green fruit shipping districts of the State there is scarcely anything of more importance to fruit growers than to keep accurate account in detail of the effects upon their business of the shippers' combine.

At the beginning of this week the California Cured Fruit Association lacked about 300 votes of a quorum; but as twenty-five votes came in in the first mail Monday, and there had been coming in an average of from five to ten a day, it seems possible that the Association may survive and the amendments making it more practical may be adopted by a narrow margin. A member may vote for the amendments alone, which is equivalent to a vote for reform without destruction.

## The Grasshopper Problem.

Grasshopper affairs have taken a peculiar course. These pests have clearly jumped out from under the strong arm of the State and are now subject only to the guerrilla warfare which each individual crop-

grower may wage upon them for the protection of his own. As our last issue went to press we ventured the prediction that the Governor would authorize proceeding against the grasshoppers by fire and sword on the foothill pasture lands, where they were jumping about waiting for their wings. So, indeed, he did. On Thursday of last week a proclamation was made by Governor Gage in which these burning words occurred:

It appears that certain lands within the counties of El Dorado, Placer and Sacramento are greatly affected by the grasshopper pest, and that the pest is increasing and threatens to destroy a considerable portion of the product of the State, and it further appears that the danger is imminent and grave and far reaching in its consequences, and that by burning certain pastures within this State the calamity may be avoided; \* \* \* that the grass on said lands shall be burned by authority of said Board of Horticultural Commissioners under the immediate advice and direction of Professors Woodworth and Clarke, and that under no circumstances is it to be understood or intended that any crops or pasturage on said land shall be burned, or other property damaged, except by express agreement between the private owners thereof and said State Board of Horticulture.

On the strength of this authorization by the Governor, Horticultural Commissioner Stephens passed the torch to Secretary Keegan, of the State Board of Horticulture with these ardent expressions:

You are hereby authorized and instructed to proceed, in company with Professors C. W. Woodworth and Warren T. Clarke of the California State University, to inspect the lands in Placer, Sacramento and El Dorado counties infested by grasshoppers and to enter into agreement with the owners of said lands, in accordance with the terms set forth in the communication this day received from his Excellency Governor H. T. Gage.

The army of subjugation and pillage advanced against the hopper hosts in Placer and El Dorado counties by train to Sacramento. The heat of the first intention was lowered by the night air on the way to the capital and, as is the case with many valiant men when marching to the battlefield, there was a paralyzing drop of temperature in the pedal extremities. En route to the anticipated scene of carnage the horticultural commissioner had a dream of the bond of Shylock which though it fully covered a pound of flesh allowed for not a drop of blood. The commissioner saw the force of the suggestion; he had the authority of the State to burn dry feed and its content of grasshoppers, but if he burned a panel of fence, or a hen coop, or any other ancient thing which could not jump, he should forfeit to the owner thereof its full value from his own purse. Despite the use of hot fomentations the temperature of the commissioner's feet kept sinking. The result was that in the morning instead of leading the army of field burners against the foothills the commissioner reclaimed the torch from secretary's hand, stamped upon it to warm his feet and the grasshopper burning was over.

But metaphor aside, the decision not to burn the foothills was an instance of sober second thought, and such is always good, providing one cannot command the right thought at the beginning. We are very sure that a campaign of burning would have entailed hardships and losses which cannot be foreseen. Field fires in the dry season in California are bad enough when everything possible is done to prevent them; their effect when promoted is altogether beyond the reach of ordinary prophets. It has been shown in the last few days, even with the careful burning of definite areas, that thousands of dollars worth of property has been destroyed; fences, standing grain, a pumping plant are among the destructions by over-limited firing. Who could tell where a wide foothill conflagration would stop? Homes, forests, orchards, foothill towns—in fact the whole vast value involved in the development of foothill wealth in agriculture and mining, and everything incident thereto was endangered by the proposition, and it is fortunate that the public burning was not undertaken. No doubt the protest from the foothill stockowners, which we publish on another page, had something to do in drawing attention to the dangers in the contemplated action.

After the burning was abandoned, attention returned to the use of numerous oil pans or "hopper dosers" described in the PACIFIC RURAL PRESS of June 7th. The horticultural commission authorized the construction of a large number of them. There



seems to be difficulty about getting them properly used, for the county supervisors of Sacramento county refused to furnish funds to pay men for running them over the infested fields on the ground that such fields were beyond the county's borders, even though most of the property threatened was within the county.

As it now appears it devolves upon each owner of property to protect his own by whatever means of killing the hoppers seems to best suit his conditions. For this work readers of the PACIFIC RURAL PRESS have been prepared by the full information of the best methods of meeting the pests which we have already given.

## QUERIES AND REPLIES.

### Polycaon in Grape Vines.

TO THE EDITOR:—I send some branches of vines, in which you will notice a hole just above the eye of last year's wood. Can you inform me what it is and if you know any cure for it? It is some kind of a borer, as it eats the pith of the wood.—VINE GROWER, Cupertino.

The insect which is boring holes in your vine canes is the same twig borer which visits the olive, prune and other fruit trees. Its name is Polycaon confertus. This insect is a native and is found in the manzanita and other native shrubs; it is usually worse in fruit plantations which are near to uncleared hillsides. Recently, however, a good deal of complaint has come from vineyards in different parts of the State of just such injury as you show in your specimens, and it has been found also that the insect multiplies in old vine stumps and the larvae bore into the young canes. It does not, so far as now known, multiply in fruit trees. Just when the insect begins to attack the vines has not yet been fully determined, but it is in all probability late in the fall or in the winter, after the wood has well matured. No one has demonstrated any successful treatment, although it has been proposed that spraying vine canes and fruit tree branches late in the fall with Paris green might poison the beetle, as he bites the bark near the buds, or spraying with whale oil soap, or some other ill-flavored compound, might avert his attack or prevent the deposit of eggs. The full life history of the insect is not, however, yet known. Experiments along this line are suggested to you. It is expected that Prof. Woodworth will soon publish an account of this insect, which will give the results of his observations covering several years.

### Morning Glory Again.

TO THE EDITOR:—I send you a sample of a creeping plant, which is covering our orchard. It must use a great deal of moisture. How can it be killed? Is there not some chemical which can be broadcasted upon it?—NEW SUBSCRIBER, Sonoma county.

The plant is wild morning glory, and the only effective method of destroying it known to us is continual cutting with the weed cutter or flat-toothed cultivator, with the teeth kept clean and sharp. This cutting should be done two or three inches below the surface of the ground, and one must not wait to see the morning glory upon the surface. It must be continually cut without having a chance to get to the light. No chemical known to us is effective in stopping the growth of morning glory without also rendering the soil barren to the growth of better plants. The problem is essentially the same as that discussed in the articles on Johnson grass, now appearing in our columns, and to which the attention of all who have to deal with weeds with running roots is directed.

### Melon Aphis.

TO THE EDITOR:—I mail to-day a young watermelon plant affected by an insect for which you may know a remedy. The parent insect is about the size of a large black ant and is spider-like in appearance. If you can suggest something that will destroy them it will be a great favor.—W. A. MURRAY, Cambria.

The insect is the melon aphis or plant louse and the treatment is spraying with kerosene emulsion, as prescribed last week for one of the same class of insects which affects the apple. You are in error about the parent insect in this case. These plant lice are never like a black ant nor a spider. Some of them have wings, but they are always small. The larger insects you noticed were not related to them.

### Sound of a Name.

TO THE EDITOR:—Please give me the correct pronunciation of the name "Holstein" in connection with the cow of that breed?—SUBSCRIBER, College Park.

Pronounce as though spelled "Holstine"; long "o" in the first syllable and long "i" in the second. The local school ma'am or the dictionary will answer such questions.

### Shot Hole Fungus.

TO THE EDITOR:—Under separate cover I send you a branch of apricots which have some disease. Wish you would tell me what it is. These were taken from trees two years since grafting on to five-year-old peach stumps. The peach trees seemed to have suffered from a similar disease of the leaf, but not of the fruit.—C. D. MAXFIELD, Riverside county.

The disease is commonly called shot hole fungus. The treatment is winter use of Bordeaux mixture, followed by a second spraying soon after the fruit is set. Your trees seem also to be suffering from drouth; the leaves are too small and the twigs too thin.

### Grain Hay for Cows.

TO THE EDITOR:—Will you kindly inform me if wheat hay is good for a cow, or if it will dry her up? It was cut pretty green.—SUBSCRIBER, Kingsburg.

Wheat hay is largely used for cows, but there are two ways in which the cow's feed can be improved. The addition of clover hay or, as it is largely in California, alfalfa hay, increases the amount of protein in the ration and thus ministers directly to the milk flow. Another improvement for grain hay is to feed succulent forage with it, for a certain amount of green juicy food not only promotes milk flow, but keeps the system in better order. The fact is not so much that grain hay dries a cow up as that a more nitrogenous and succulent ration promotes the milk-ing.

### Cranberries.

TO THE EDITOR:—Can you inform me where I can get some cranberry cuttings? I live in Butte county, high up in the mountains, 4400 feet above the sea. I have ground suitable for cranberry culture. I do not know where to get cuttings.—MOUNTAIN FARMER, Butte Meadow.

Cranberry plants have been frequently tried in California and some fruit was grown years ago on Bouldin island in the San Joaquin river, but the culture was never carried to commercial standing. All experiments known to us away from the river lands were failures. The plant seemed to resent the dry air and summer heat even when irrigated as other plants are. The nearest commercial production of cranberries is on the low lands near the sea in the State of Washington. Possibly the plant might do on the mountain meadows with suitable soil and water for flooding, but it needs actual test to prove it. We presume the plants cannot be obtained in this State. The true way to begin is to get a few rooted plants from Wisconsin growers.

### Broncho Grass Not Johnson Grass.

TO THE EDITOR:—Please tell me if the inclosed grass is Johnson grass?—SUBSCRIBER, Pescadero.

Johnson grass is one of the sorghum family and its seed head is like a sorghum head on a small scale. The plant you send is very different. It is a scant head, looking a little like coarse wild oats. It is broncho grass (*Bromus maximus*), and is usually counted a bad weed in the interior, and reported as not acceptable to stock. On the coast it seems to be in more favor with farmers, who report that cattle eat it readily when moistened by the fog. It is, however, a poor, coarse grass and makes poor hay.

### A Native Perennial Lupin.

TO THE EDITOR:—Can you name the enclosed? Is it a nitrogen gatherer? It looks like a lupin, but is a perennial and has a tap root like alfalfa. It seems to grow only on sandy land and is harder to kill out than alfalfa. It is growing thickly upon some of my land and I should like to know whether it is injurious or beneficial.—SUBSCRIBER, Oleander.

It is a native perennial and is a good nitrogen gatherer, but injurious to vineyard or fruit land, because it removes too much moisture during the summer and can not be plowed under or easily killed out. Winter-growing legumes, with succulent tissues to decay readily in the soil, are the ideal for California.

## WEATHER AND CROPS.

### Report of the U. S. Weather Service for Week Ending June 23, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

#### SACRAMENTO VALLEY.

Warm weather has prevailed during the week. Grain has ripened rapidly, and harvest is progressing in some sections. So far as can be ascertained, there has been no material damage to the grain crop by grasshoppers, and it is believed there will be none, as the grain is too far advanced to be seriously injured. Haying is nearly completed, and the crop is above average. Grasshoppers have caused considerable damage to corn, melons and deciduous fruits in portions of El Dorado, Sacramento, Solano and Yolo counties. Farmers are making efforts to check the pest. All varieties of deciduous fruits are ripening rapidly. Vineyards and citrus fruits continue thrifty.

#### COAST AND BAY SECTIONS.

The weather has been warm and generally clear during the week, with fogs along the coast. Grain and fruit have matured rapidly, and are in excellent condition in most places. Haying is progressing and grain harvest has commenced in some places. There will be full crops except in the south. Grasshoppers have not yet attacked the crops in the coast and bay counties. Hops, beets, beans and corn are making good growth. Vineyards are in excellent condition, and give indications of a heavy yield. Deciduous fruits are mostly of an excellent quality and the yield is above average in many places. Citrus fruits are in good condition.

#### SAN JOAQUIN VALLEY.

The weather has been hot and dry during the week, causing a rapid maturing of grain and fruit. Grain harvest is in progress in nearly all sections. In some places the grain is falling below expectations both in quality and quantity, but in other sections there will be fair crops. The first carload of new wheat was shipped from Tulare county to Stockton on the 17th. Grasshoppers are causing much damage in many localities, and farmers are vigorously fighting the pest by burning pasture lands and spraying vines and trees. Haying is progressing rapidly. All fruits are in excellent condition, with the exception of pears in some localities. Apricot drying has commenced. Vineyards are unusually thrifty.

#### SOUTHERN CALIFORNIA

Continued cool weather during the week has somewhat retarded development of deciduous fruits, but it is regarded as generally beneficial to all crops. Apricots are reported fully two weeks later than usual, but they will be of better quality for the slow ripening. Blackberries are also backward, but a heavy crop is looked for. Citrus fruits, vineyards and walnuts are in excellent condition. Haying is nearly completed in some sections. Grain harvest is progressing. Grasshoppers have attacked some of the vineyards in San Bernardino county, and the Horticultural Commissioners have been requested to assist in exterminating the pest.

LOS ANGELES SUMMARY.—Cool, foggy weather until close of the week was favorable to crops; warm at the close increased the demand for irrigation water. Hay grain harvest nearing end, and in sections some grain is being headed for seed.

EUREKA SUMMARY.—Continued warm weather is developing fruit and ripening berries rapidly. Haying is general; indications for a very heavy crop. A few Humboldt strawberries in the market.

#### Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 25, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week...	Minimum Temperature for the Week...
Eureka.....	.01	51.88	47.50	43.89	66	50
Red Bluff.....	.00	31.75	24.64	24.82	100	64
Sacramento.....	.00	17.95	20.21	23.54	98	54
San Francisco.....	.00	18.98	21.17	24.91	70	48
Fresno.....	.00	6.85	11.33	13.21	104	62
Independence.....	.00	4.34	6.17	5.85	98	66
San Luis Obispo.....	.00	21.95	31.14	17.52	92	50
Los Angeles.....	.00	10.57	16.29	17.55	94	54
San Diego.....	.00	6.16	11.45	7.66	68	58
Yuma.....	.00	68	3.60	2.80	116	70

#### Spanish Raisin Crop of 1902.

Special Report of the Pacific Commercial Museum of San Francisco for the PACIFIC RURAL PRESS.

The unseasonable cold weather that prevailed the first half of May retarded flowering of the vines, and the crop does not look so abundant as last season's did at same date. Still, owing to new plantations, the vines cover a more extended area, and, barring accidents, an average yield is expected—say, 500,000 cwt.—against 495,000 in 1901 and 537,000 in 1900. No stocks remain in growers' hands and speculating dealers are practically clear also. High opening prices are therefore anticipated. Freight will probably rule from 25 to 40 shillings per ton.

R. N. BARTLEMAN, Consul.  
Valencia, Spain, June 4, 1902.



## THE DAIRY.

### How Milk is Carried to New York.

Our dairy readers around the bay who are coming each year to take part in the milk supply of the metropolis will be interested to know of recent improvements in the handling of milk from the suburban districts of New York. The Crop Reporter of the Washington Department of Agriculture gives the data for a review.

**MILK AND PEOPLE.**—According to a recent estimate of the Board of Health of New York City, approximately 1,230,000 quarts of milk and cream are daily shipped to New York City to supply the wants of its 3,500,000 people. (The Census of 1900 places the population of New York City at 3,437,202.) Of this vast quantity from 85% to 90% is transported by the railroads, while the remainder is brought in by wagon from suburban territory, or is supplied by herds within the city limits. These herds contain an aggregate of 23,200 cows, are under the supervision of the local board of health, and are regularly inspected for tuberculosis by its officers.

**SUPPLY DISTRICTS.**—New York, New Jersey, Pennsylvania, Connecticut and Massachusetts supply the milk which is brought into New York City by the railroads, some of it coming from a distance of over 350 miles. A great quantity of milk is forwarded from the northern and northeastern sections of New York State, and it is interesting to note that in some cases shipments destined for New York and Buffalo originate within 12 miles of each other. Steamers touching at points on the Hudson river carry about 40,000 quarts of milk and cream daily to New York City.

In a few instances the supply of milk from districts whose shipments were large but a few years ago has greatly diminished or entirely disappeared. This is particularly true of what was once the dairy country of Long Island. From this section shipments over the railroads have steadily decreased from 6,500,000 quarts in 1885 to practically nothing in 1901. This undoubtedly is largely due to the intensive cultivation of garden truck which, having sale in a great near-by market, has developed into an industry that has become far more profitable than dairying. Another but less important cause for the practical disappearance of this supply is the rapid absorption of farms adjacent to New York City into suburban villages, this movement having taken place to a remarkable extent during the past five years.

**CARS.**—In the transportation of milk, baggage cars, refrigerator cars, and cars especially constructed for the purpose are employed. The railroads adopt the style of car best suited to their individual requirements. In the case of light shipments and short hauls, baggage cars appear to meet every requirement and are generally moved in conjunction with local passenger trains. In the case of long hauls, however, refrigerator or special milk cars are used. These cars are plentifully supplied with ice during the warm summer months and, in extremely cold weather, are often steam-heated to prevent the milk from freezing.

**STATIONS.**—Nearly all railroads which handle a large milk traffic have covered receiving stations along their lines. The following description of a modern receiving station was furnished by a prominent railroad official in describing those in use along the line of his railroad:

"Shipping stations are equipped with large cooling vats in which cans of milk are placed immediately when delivered by the farmers. These vats are filled with water and ice, the milk is stirred and cooled down to 40° F. within forty minutes from the time it is received, and kept in ice water until the train arrives, when it is loaded direct from the vats into a refrigerator car. Shipping stations are also equipped with wash boxes into which a jet of steam is forced, which warms the water to boiling point. The cans are washed thoroughly in hot water, rinsed in cold water, and then steamed out by being turned upside down over a jet of steam, then placed on racks out of doors to air out. Sal soda is used principally in washing cans. All stations are supplied with an abundance of pure water, which is used freely."

**RATES.**—Freight rates on milk and cream shipped to New York City lack uniformity. Although many of the railroads have adopted the zone system, as requested by the Interstate Commerce Commission, others are using their own systems, causing noticeable discrepancies in freight charges for equal distances as between different railroads or divisions of railroads.

One railroad transporting milk to New York from a distance of 155 miles charges a uniform rate of 25 cents per can of forty quarts on all its milk shipments, whether they originate near the city or 155 miles distant, and no differential is established between the milk and cream rates, the same charge being always asked for carrying both commodities.

Another railroad, composed of a number of divisions, charges so much per can from each division, with the result that farmers living at a station located 109 from New York are paying 25 cents per can to ship their milk to the city, while others living at a station 51 miles distant, but on another division,

have to pay 30 cents a can. The rate charged on the latter division is higher because the average haul is longer, but this does not prevent, at least in a few instances, a farmer living at a longer distance securing a lower rate than one living at a shorter one.

The remainder of the railroads seem to have generally adopted the zone system, but no railroads running into New York charge uniform rates on milk and cream with the single exception of the one noted above. One road asks 5 cents more per can of forty quarts on cream, while the others appear to charge 18 cents more.

### Dairy and Stock Raising in Fresno County.

By CHESTER ROADHOUSE, Selma Union High School, Class of 1902.

The idea seemed to prevail a few years ago that stock raising and dairying could not be carried on successfully in Fresno county; but that, instead, this industry should be developed in the foothills, on mountain ranges or on the uncultivated plains of Texas and Arizona. This idea has now been proved to be entirely erroneous. In a level, fertile valley which is adapted to the growing of alfalfa, with a good irrigation system, as well as an average annual rainfall of 8 inches, there are certainly untold advantages for stock raising.

Hundreds of beef cattle have been shipped from Texas, Arizona and Mexico to this place and fattened on alfalfa, and this has been found to be a profitable business. The alfalfa crop after the first cutting produces a rapid slender growth and is well covered with small leaves, and, under favorable conditions, produces five and six crops a year. The green alfalfa of Fresno county is, without a doubt, the most suitable, convenient and proper food for the dairy herd.

C. H. Schmidt, former manager of the Selma Dairy Association's creamery, says: "The great success of the creamery business in the San Joaquin valley is not only based upon good markets and shipping facilities, but also upon the great alfalfa-growing industry. The main milk-producing feed in Fresno county is alfalfa. It is worth a great deal more than all other kinds of hay, and, pound for pound, nearly equals wheat, bran and oats. Alfalfa belongs to those feed stuffs we term concentrated, and, in connection with corn as silage, makes an ideal ration."

The Selma Co-operative Dairy Association, owned and managed by the farmers and business men of Selma and vicinity, is one of the most important factors in the development and enrichment of our community. Its products stand in the foremost rank of the creameries of the State. During the month of April the Selma Co-operative Creamery handled daily over 21,000 pounds of milk, from which was produced 1000 pounds of butter. The amount of butter made by this creamery during the month of April was about 30,000 pounds, for which over \$5000 was paid to the producers. Think of the rapid development the creamery and dairy industry has undergone during the last few years. About 1896 a small creamery was started in Selma near the Whitson Hotel, receiving about 500 pounds of milk a day. From that time to the present the creamery business has rapidly increased to the capacity of the present co-operative creamery. It is equipped with the latest improved machinery and appliances, using the modern cylindrical churn, the improved butter mold and butter, and two cream separators; there is also in connection with the creamery an ice plant, which supplies it with ice, ice water and cold storage.

Throughout Fresno county are several skimming stations, where the cream is taken from the milk and shipped to the larger stations, to be converted into butter.

The wave of prosperity did not strike Fresno county until about 1895. Before that time the farmer's family was frequently seen in town in the farm wagons and everything evinced hard times. The introduction of stock raising and dairying and their rapid growth from that time to the present has certainly influenced the present prosperity of this county.

### Butter in Asia.

While we have anxious and desiring eyes on the butter trade of the Orient it should not be forgotten that Siberia has ambitions in the same directions and is in fact realizing on them. Under date of May 2, 1902, Consul Samuel Smith of Moscow says that freight traffic on the Trans-Siberian Railway has grown immensely during the past few years. In 1899 the increase over the preceding year was 95.96%; in 1900, 115.63%, of which 62.13%, or 38,435,904 pounds, was butter. In 1901 the shipments of butter had grown to 72,000,000 pounds, and during the latter part of the summer the railroad authorities were obliged to dispatch four special trains, each of twenty-five refrigerator cars, for the transportation of this product. The export of Siberian butter is increasing astonishingly. Formerly, butter was produced in western Siberia only as far as Omsk, but at present it can be obtained in the Tomsk and Irkutsk governments. We are not surprised that there should be a good supply of butter where those Russian names are habitually used. It would seem to be necessary to have something to soften the vocal chords frequently.

## HORTICULTURE.

### The Robe de Sargent Prune.

J. Luther Bowers gives the San Jose Mercury an account of this fruit, which is better than its general repute. He says: During my nineteen years in California as a fruit grower I have come to the conclusion that the Robe de Sargent is just about right. I will cite a few cases here in this section of their very productive nature.

The home orchard of Fiacro Fisher at Coyote, some ten years old, has always borne a crop. This orchard is set each alternate row of Robe de Sargent and French prunes. The crop this year will be enormous, and all former years have been very large, running about sixteen to the pound, green. The orchard on the east side of Coyote, belonging to the same party, composed of about one-eighth part of Robe de Sargent, set promiscuously about the orchard, has always produced a very heavy crop. The past year—1901—when prunes were a very short crop, this orchard of Robe de Sargents was very full, and at this writing has a larger crop than the trees should bear.

The orchard of Thomas Fisher has quite a few Robe de Sargents and has also given good crops. The Imperial prunes in the same orchard are very full this season—in fact, they are just one mass of fruit. This orchard is 1½ mile south of Fiacro Fisher's. Climatic conditions may have something to do with the fruitfulness of these orchards. No irrigation has ever been used or needed. The fruit always dries large, running from thirty to forty-five, taking from 230 to 240 pounds green to make 100 pounds dry, of the very finest quality, black as ink and very glossy, always commanding 1 cent more per pound than the French for the same size and grade. I have superintended the drying of these prunes for the last two years, and they were admired by all who saw them. The Robe de Sargent has a very tender skin and bruises or bursts very easily, but with these two bad traits they are one of the very best shippers in a ripe state and will stand a trip of from four to six days, no matter how ripe.

The Fisher Lake Packing Co. last year shipped by express to many different points when the fruit was so ripe that it would fall from the trees with the least jar, still they carried to destination in good order as far as Indiana and Illinois, Arizona and Colorado.

### The Italian Prune Out of Favor in Oregon.

The experience of recent years is leading Oregon growers to forsake the Italian prune, which, before that, they so vigorously advocated. The Oregon Agriculturist says: It can no longer be maintained that the Italian prune is a really profitable variety except under most favorable and rare conditions. We have now given this prune a practical test, and it has not come up to expectations. Although of fine quality, we have been compelled to develop a market for it by selling at a lower price than could be obtained for other prunes of the same size. This would not be a serious matter if it were a reliable yielder.

Dr. Sharples intends to change a portion of Italian orchard to Clairac Mammoth. Dr. Caldwell is preparing to top-work a portion of his Italian orchard with the Sugar prune. A number of prune growers in the Willamette valley are top-working their Italian trees with the Willamette prune.

In those favorable localities in which there has been a fair crop of Italian prunes nearly every year there will be little direct interest in this problem. The orchardists who have been getting only about one crop in three years can hardly go amiss in doing some experimental work.

### Using the Bran and Arsenic Poison for Grasshoppers.

Mr. T. W. Treadwell writes about the bran and arsenic prescription, which has already been given in the PACIFIC RURAL PRESS, these additional details:

Take two parts of pure arsenic to four parts of coarse brown sugar, and to six parts of bran and shorts mixed. Mix these twelve parts carefully while dry in a smooth vessel (say a large wash basin) according to quantity needed. Take care to dry-mix it over and over again so that the arsenic may be attached to every part of the bran and sugar. Take care that no moisture gets to it, or it cannot be mixed fully. Then take out small quantities, say a soup plate full, at a time and wet it to a mash, mix it thoroughly till the arsenic is dissolved and incorporates in the bran. Then with a teaspoon put down one lump at every three steps on a straight line, not at foot of vines and trees, but in the open near them. Put in a small stake with a red rag at starting point and travel in a straight line to the end, putting red flags where the undulations of the ground need them. This is done because all life of birds and animals will be killed out wholly by it, and after all the hoppers are dead you must walk over the lines and gather what is left of the poison, or cattle, horses, sheep and children may be killed by eating it. The hoppers will leave everything for the sweet bran and lay dead in millions.



## THE FIELD.

## What Can be Done With Johnson Grass?

## NUMBER III.

**PATENTED METHODS.**—A Texas company has patented a cultural method of killing the grass. This method has been widely advertised and has been the subject of several inquiries received by this office from Texas planters. For these reasons a thorough investigation of the method was made.

The process of this company is as follows: The ground is broken to a depth of about 3 inches some time during the winter. The broken ground is then pulverized with a harrow as deep as it was broken, for the purpose of breaking up the root stocks and stimulating an early and vigorous growth of the grass in the spring. The grass is then allowed to grow undisturbed until about the middle of April, when the land is again broken and the green grass turned under. About one week after this second breaking the ground is again pulverized as deeply as plowed. The land, whether allowed to remain fallow or planted in cotton, is then cultivated from five to eight times during the season. The intervals between the cultivations extend from a week to twenty days, depending upon the growth of the grass, which should be allowed to make a good, vigorous start between cultivations. Each cultivation should be made as deep as the land is mellow, which should be 6 or 8 inches after several cultivations, the purpose being to stimulate the grass to the greatest possible growth, and by never allowing it to reach any considerable height its vitality will finally be exhausted and it will thus be killed.

If this method is used on fallow land it will be seen that a much greater amount of work is required than would be necessary by the process of summer cultivation outlined above. It is also required that the work be done during the spring and early summer, when planters are usually very busy. If, instead, the land be cultivated in a cotton crop during these operations, the fact that the land can be broken or cultivated in but one direction only renders the labor much more difficult. The plants which are growing in the cotton row are untouched by the frequent deep cultivations and continue their growth unchecked. In order to exterminate the plants the slow and expensive method of digging them out by hand must be employed. If successfully done, this method also endangers the life of the young cotton plants. The principles on which this method of extermination are based are doubtless sound, but the successful working out of the method is always expensive. For this reason it is not likely to be adopted by any of the numerous renters who make up a large proportion of the population in all the Southern States. It must also be remembered that since this method has been patented it can not be used by any planter except by the consent and under the direction of the patentee. The charge made by this company for directing their methods during the past season was \$2 per acre. In return they guaranteed that if directions were implicitly followed the grass would be exterminated. There is no doubt that the same amount of labor expended during the late hot summer could be much more cheaply performed and would be equally successful. The payment of the bonus of \$2 per acre would not be required and the planter would take advantage of a season when his growing crops did not demand all his attention.

**USE OF CHEMICALS.**—A variety of chemical substances have been employed for destroying Johnson grass. Among these are salt, kerosene, lime, bleaching powder, and some more complex mixtures, such as nitrate of soda and white arsenic or arsenious acid in water. A certain proportion of these last-named chemicals has been patented for this purpose.

Common salt has frequently been used by planters for killing this grass. It is generally applied broadcast, but is sometimes used as a brine. So far as known, it has never been used on any large fields of the grass, but commonly on small patches, in gardens, etc. The effect of salt, when used in definitely known quantities, has not been determined, because on the small patches no record is usually kept of the amount actually used or the size of the patch. It is quite certain that in such cases a larger amount per acre is used than could be profitably applied in large areas. There is also considerable uncertainty as to the actual value of salt in any quantity. Some planters have reported that when applied in a layer 2 inches deep on the surface of the ground the grass was killed. Others report results directly opposite. Wherever it is applied in the dry form there is always danger of much of it being washed away if the first succeeding rain happens to be heavy. The effect of salt upon the roots beneath the surface is entirely lost unless it is carried into the ground. It can not be recommended as an effective agent for field use.

Kerosene has been used in about the same way as salt. Its value as a destroying agent is doubtful. Mr. David Williams of Washington, Texas, reported 1 gallon on a patch 6 feet square with perfect success. No Johnson grass appeared in the two years following. The oil used in this case was probably refined oil, which is expensive. Since the discovery and

TABLE II.

Kind of forage.	Fresh or air-dry substance.					Water-free substance.				
	Water.	Ash.	Crude protein.	Fiber.	Nitrogen-free extract.	Ether extract.	Ash.	Crude protein.	Fiber.	Nitrogen-free extract.
Timothy hay.....	13.2	4.4	5.9	29.0	45.0	2.5	5.1	6.8	33.5	51.7
Redtop hay.....	8.9	5.2	7.9	28.6	47.4	1.9	5.7	8.7	31.4	52.1
Johnson grass hay.....	10.30	6.77	7.30	29.34	44.12	2.16	6.62	6.44	34.22	50.89
Red clover hay.....	15.3	6.2	12.3	24.8	38.1	3.3	7.3	14.5	29.1	42.5

opening of the great oil fields in southern Texas crude oil can be secured at a much lower rate than the refined article, and it would probably be quite as effective for killing vegetable growth as the refined oil. It would, however, be much more difficult to apply the crude oil on account of its thicker consistency, but for this same reason it would not be as easily washed from the soil.

Chloride of lime or bleaching powder has also been recommended for this use, but its value has not been definitely proved. The solution of white arsenic and nitrate of soda, referred to above, was patented in 1898 by Mr. William A. Chapman of Cleburne, Texas, and is made and used in the following manner: One pound of white arsenic is introduced into 6 gallons of water and boiled until the arsenic is dissolved. The mixture is then completely cooled and 1 pound of nitrate of soda is dissolved in it. The addition of the nitrate of soda is for the purpose of holding the arsenic in solution, as otherwise it would recrystallize in the water and a repeated boiling would be necessary each time it was desired to use the solution. The poisonous element is the arsenic. It is intended to apply this liquid with a sprinkling pot, and one or perhaps two applications are recommended. No further information as to this patent compound has been secured.

**ELECTRICITY.**—Electricity has frequently been advocated as a sure method for eradicating all vegetable pests. A few years ago it was reported that a company was being organized in Fresno, Cal., to utilize this method, but nothing further has been heard from it. Electricity can not be satisfactorily and economically used until different and less expensive methods of applying it are discovered.

**UTILIZATION OF JOHNSON GRASS.**—So great an evil has Johnson grass become in the grain fields and cotton plantations that many planters and others have become violently prejudiced against it. They refuse even to listen to the suggestion that it makes a valuable and nutritious hay, and wish to hear of nothing but its complete and rapid extermination. Nevertheless, the fact remains that in the States of Georgia, Alabama and Mississippi, where the grass has been long established, many hay farms of several hundred acres each now exist and have existed for years. On some of these, as for instance those in the Alabama valley in the vicinity of Montgomery and Selma, or in the famous delta of Mississippi near the Yazoo river, the production of Johnson grass hay has been found very profitable on lands which rarely produce less than a bale or a bale and a half of cotton per acre. Of course, on these rich lands the yield per cutting and the number of cuttings obtained in a single season will, as a general rule, be greater than on poorer soils. At the same time, the profit from any crop is less on poorer soils than on the richer, so that under these conditions Johnson grass at the prices of hay for the past few years is a profitable hay crop throughout the Southern States. It has advantages over several of the commercial crops which can be raised in those States. In the first place, a meadow can be very easily set in Johnson grass, if that be desirable. On many plantations, however, good meadows—or what would quickly make good meadows, if permitted—have already been formed, and the growth is vigorous, luxuriant and long continued. The yield is large, and the quality of the hay when cut at the proper time is not exceeded by any other hay on the market, although this may sound like a strong statement. Of course, Bermuda hay is finer and probably yields more food, ton for ton, but the yield per acre is not usually as large, while the labor of cutting and curing is greater, and the hay is so fine that considerable of it is wasted in feeding. In most markets where Johnson grass hay comes into competition with other hays it does not sell for as high a price, it is true, but this is due to several causes, chief among which is probably the fact that the hay has not been of first quality because having been allowed to become mature and woody before cutting. There is also a strong prejudice against it because so much of it contains ripe seed, which the users are afraid of introducing into fields.

There have been many inquiries concerning the nutritive value of Johnson grass, and two tables of chemical analyses are given to show this value. Table I, adapted from Bulletin No. 20 of the Texas Agricultural Experiment Station, shows the composition of the grass at different stages of growth. The amount of water is first calculated and then the percentage of the ingredients in the dry material. The carbohydrates and albuminoids of this table are the same as the nitrogen-free extract and the pro-

tein, respectively, of the second table. The total nitrogen given in the third line from the bottom is the amount of that substance in the albuminoids or protein, and is the sum of the albuminoid and amid nitrogen given in the last two lines of the table.

TABLE I.

	Time when cut and state of growth.					
	April 2—6 inches high.	April 10—8 to 10 inches high.	April 21—12 to 18 inches high.	April 29—18 to 20 inches high.	May 7—Seed in dough state.	May 18—Seed mature.
Water.....	Per Cent. 81.06	Per Cent. 77.44	Per Cent. 86.09	Per Cent. 80.9	Per Cent. 76.5	Per Cent. 69.33
Ash.....	11.24	11.62	11.68	10.38	7.98	6.36
Ether extracts (fats)*.....	5.59	8.60	8.10	6.52	4.11	4.07
Crude fiber.....	21.55	18.74	24.56	25.29	33.32	33.66
Carbohydrates....	46.2	41.5	32.41	43.75	45.15	46.10
Albuminoids....	15.42	19.54	23.25	14.06	9.44	9.81
Total nitrogen....	2.78	3.12	3.73	2.25	1.51	1.57
Albuminoid nitrogen.....	2.55	2.72	2.73	1.96	1.34	1.40
Amid nitrogen....	.23	.40	1.00	.29	.17	.17

\* The ether extract in this and in the analysis of the other grasses, especially in the younger plants, represents more than the true fats, owing to the large amount of coloring matter removed.

It should be remembered that only a large series of analyses at different stages can show conclusively at what period the grass has the highest nutritive value. This may differ from the time when it has the highest feeding value to the farmer. To him the time when the grass gives the largest yield must also be taken into consideration. This may not be exactly the time when the nutritive value is highest. The time for cutting Johnson grass, as above stated, is when just in flower or a little earlier than the "dough" stage of Table I. It will be noted that the percentage of water and ash or mineral matter in the table gradually decreases as the plant gets older. The carbohydrates are about the same at both ends of the test. The valuable albuminoid or muscle-making material is greatest when the plant was 12 to 18 inches high, after which it decreases rapidly, while the crude fiber increases with the age of the grass. From this table Johnson grass would appear to have the greatest nutritive value when about 20 inches high or perhaps a little more, but of course the yield at this period would be considerably less than when the grass is in flower. Larger series of analyses would be very helpful in more accurately determining just when the grass should be cut.

Table II contains comparative analyses of timothy, redtop, Johnson grass and red clover hays. The figure of timothy are the averages of sixty-eight analyses; for redtop, the average of nine analyses; for red clover, thirty-eight analyses; and for Johnson grass, three analyses of air-dried hay and seven analyses of the water-free substance.

From this table we see that an analysis of three samples of Johnson grass shows it to contain very nearly as much protein as redtop hay, and considerably more than timothy hay, the figures being 7.3%, 7.9% and 5.9%, respectively. None of them contain as much as the rich red clover. In the water-free substance, however, the Johnson grass shows a little less protein than either of the other grasses; in fat, too, it averages a little lower. The amounts of fiber and nitrogen-free extract do not differ enough from those of timothy and redtop to deserve special mention. When we consider that Johnson grass yields much heavier than either timothy or redtop, and that it is nearly equal to these in feeding value, we realize that it is an exceedingly valuable hay grass for the Southern States.

(TO BE CONTINUED.)

How far a man can see with unaided vision depends upon several conditions—the clearness of vision in the individual, the density of atmosphere, size of object and illumination. Under proper conditions, an object 1 foot above a level stretch can be distinguished 1½ mile; one 10 feet high, 4½ miles; 100 feet high, 13 miles; mountains 5000 feet high can be seen 95 to 100 miles. Five miles may be taken as the limit at which a man can be seen by an observer on the same level.



### Long-Distance Electric Transmission in California.

The electric power lines which are stretching such long distances in California, bringing the force of Sierra waters to the service of city and rural life and industries, are of much interest to our readers, because electric power is coming to be so largely used in farming operations.

In a paper recently prepared by Mr. A. C. Perrine for the New York Electric Society fitting credit is given to California for leading in the application of electricity. He says:

For the past twenty years in the history of electrical engineering there has not been a time during which remarkable work on the Pacific coast has not attracted attention. Notable work on the Pacific coast is not confined to the last few years or to any particular locality. From the north to the south plants are scattered which merit attention and study, particularly to many of us who are not familiar with any work at all similar.

As we move southward into California the power plants begin to multiply, and connected with every one generally is something much of interest. Many have historical importance, though most have long ceased to attract particular attention. The traveler in the mountains finds, far away from any appearance of civilization, a well-kept canal, or ditch, as these pioneer engineers would call it, and following it for a few miles a low, constant, not unmusical note reaches his ear, and he knows that beneath his feet along the river banks lies one of those power plants, ceaselessly generating current to be used in the neighboring mines or the distant cities.

The two central California plants to which I wish particularly to direct attention at present are the plants of the Standard Electric Co. and the Bay Counties Power Co. Both of these plants are great and long-distance extensions of small undertakings, though the growth of the Standard Co.'s plant is the more notable and worthy of the greatest attention for the reason that this plant was more original in its conception and the more remarkable in the manner in which that conception has been carried out.

The Bay Counties Power Co. is a growth from two small plants within 30 miles of each other, situated in the Sierra Nevada mountains, the original of the two being the plant of the Nevada County Power Co., supplying Nevada City and its neighboring towns, which is really remarkable on account of the fact that it was one of the first—if not the very first—plants in California entirely successful as a financial undertaking, and one which from its original period of operation successfully carried out the difficult undertaking of supplying mines with power. The other part of the Bay Counties Power Co. was originally more moderate as an undertaking, but has grown to be the more important side of the business. This company was the Yuba Power Co., using a fall in one of the irrigating ditches and returning its tail water to the ditch for further distribution in irrigation.

The Standard Electric Co. has now been building its plant to transmit electricity 110 miles to San Francisco for about four years, and will continue to build without supplying power until it is satisfied

that the work is done, and so thoroughly done that there can be no question as to the continuity of the service. In the first place, storage reservoirs in the high Sierras have been provided for an estimated

storage of water amounting to 150 days—equal to the maximum dry period the records of the State can show are to be anticipated. These reservoirs, situated at elevations varying from 6000 to 8000 feet above sea level, in Alpine county, where there are only eighty inhabitants, exclusive of Indians, are provided with dams built in a most thorough manner and cared for most regularly. From these reservoirs the water is allowed to flow down 50 miles of the channel of the river to the diverting dam near West Point bridge, where it is taken out of the river and carried along in a ditch about 25 feet wide and 5 feet deep to the crest of a hill above the power plant, from which a wood stave pipe line 3000 feet long leads to where a sheer descent can be made to the power plant itself, which is supplied by a head of 1450 feet with a length of pipe of only about 3600 feet. It can readily be seen that the flow of water in 20 miles of ditch cannot be regulated to suit the variation in load likely to be experienced by the plant, and in order that the ditch may be used with a constant flow a reservoir is provided, into which any surplus of water that may be flowing above that demanded by the load can be retained until a peak load period is reached, when the surplus is supplied from the reservoir.



From Colgate, Cal., to Oakland, where the Bay Counties line ends, is 152 miles. From Oakland to San Francisco by way of the Standard Co.'s line is 70 miles. The tying-in at Oakland gives, therefore, a transmission of 222 miles from Colgate to San Francisco. Power is taken backward, so to speak, from Mission San Jose over the Electric line as far as Stockton. Here energy aggregating several thousand horse power is distributed in every day, hard commercial service at a distance of 218 miles from its point of generation. "S. K. C." are the initials of the inventors of this type of electrical apparatus—W. Stanley, J. F. Kelly, C. C. Chesney.



Flume Along Yuba River, Cal. From "Point View" a Panorama of Nearly Four Miles in Length can be Seen.



## RANGE INTERESTS.

### What the Stockmen Think About Burning Ranges to Kill Hoppers.

In order that readers may have all points of view we give the stockmen's side of the pasture burning to kill grasshoppers. A meeting of prominent owners of cattle and sheep was held in Truckee on Thursday and it was unanimously determined to oppose the burning of grazing lands in Sacramento and El Dorado counties by all honorable and lawful means. As stated by Mr. C. F. McGlashan, in a public manifesto in the stockmen's interests, it would seem that the press has only portrayed one side of the question, namely, that the grazing lands should be burned to preserve, if possible, the orchards and vineyards; that it seems to be taken for granted that grazing interests are of no consequence, and that at all events the grass crop has been harvested, so to speak, for nothing remains but dry and worthless grass or stubble; that if the burning of this worthless grass can by any possibility preserve some of the vineyards and orchards no public-spirited man should object; that the question has been placed exactly upon the same ground as the destruction of houses by dynamite during a conflagration to create a fire-break.

There is another side to this question which the stockmen wish to have published in the interests of fair play. It is not supposed that the action of the Boards of Supervisors will result in the destruction of all the grazing lands, but during the excitement which prevails in the presence of the overwhelming calamity caused by the grasshopper scourge the stockmen have every reason to fear the fires will get beyond bounds and do unthought of devastation. They therefore wish to urge that this dry grass is of value.

**VALUE OF DRY FEED.**—The owners of stock and sheep who summer their flocks and herds in the vicinity of Truckee, but who live in Sacramento and El Dorado counties, and who return to those counties in September or October, are horrified to learn that the burning of their fall ranges is seriously contemplated. The dry grass which remains on the grazing lands of these two counties is all that stands between 50,000 head of sheep and cattle and death by starvation. Just as soon as possible in the spring the cattlemen and sheep owners hurry their dairies and bands of cattle and sheep to the ranges on the summits of the Sierras, in order that as little as possible of the valley grasses may be eaten. This dry and seemingly worthless grass must last the cattle and sheep for six or eight weeks in the fall, until the new crop of grass is long enough for pasturage. When the wintry winds and threatening storms of fall drive the herdsmen from the mountains they do not expect to find any green feed upon their return to the valleys, but they do expect that the good, strong, wholesome, dry grasses which they left standing in the spring will tide the stock over until the green grass comes. Without this very dry grass which it is proposed to burn every hoof of cattle and sheep now in the mountains must inevitably perish. There is no pasture to be obtained elsewhere. The winter storms render it imperative that the stock be taken out of the mountains, and it is a physical impossibility to find sufficient pasturage anywhere in California if the thousands and tens of thousands of acres owned by these men are destroyed by fire during their absence. Ranges are very scarce, both in winter and summer. For untold years the owners of stock have been accustomed to depend upon the dry feed for the fall pasturage, and to this end they have purchased the lands which it is now proposed to destroy. Not only will their animals die of starvation and their business be totally ruined, but there will be little grass next year, for the old grass protects

young and tender grass from the frosts and from many other dangers.

**THE RANGE OWNERS.**—Among the many men who own lands in the counties of Sacramento and El Dorado, and who also own summer ranges in the Truckee Basin, and who are nearly all here now, are the following: G. W. Mills, William Carpenter, S. Ewer, Joseph Joerg, Perazzo Bros., Daily Bros., Joe Woodward, J. Fleckenstein, W. Woodward, the Tomlinsons, J. B. Scott, Joe Holdner, Ryan Bros.; J. E. Butler, B. F. Biggs, W. Williams, Lou Oakley, W. M. Sayles, Frank Walker, A. Morrison, J. Quinn, Jack Woods, Joe Wilson, Robert Bance, H. Barton, A. Barton, Mrs. Porter, L. Cothrin, J. Broder, Berry Bros., William Dixon, M. Van Winkling, H. Dalton, Bud Wilson, Mrs. Piskett, Kyburz Bros., C. Johnson, Lester Estate, J. Miser, Julia Armstrong, W. Atwater, C. Roemer, T. Meiss, John Long Estate, John Hanlon Estate, W. Grimshaw, Mrs. Miser, G. Sherman and P. Hauss.

**A SPECIAL PLEA.**—At the meeting it was asserted that this burning of the grazing lands is at best an experiment, and that it is by no means sure to protect either orchards or vineyards. Even the most enthusiastic advocates of this radical measure admit that it is too late to save the great number of districts which are already infested. The drifting swarms of young grasshoppers which have already got in their deadly work will not be affected. They have left the grass lands for the more enticing orchards and vineyards, and burning the pastures will not bring them back. The great flying clouds of hoppers that migrate over tens and hundreds of miles of country and settle where and when they please are already forming, and fire will not call them down from the clouds. The season has passed for killing the eggs and young insects by fire, for they have already left the uplands.

Destroy hundreds of thousands of acres of grass lands and not a single grasshopper will be destroyed that is already in the fields, or that is able to fly, but you will effectually destroy the cattle and sheep industries of Sacramento and El Dorado counties. These industries have been measurably spared because the grasshoppers do not like dry grass, which is so necessary to the cattle in the fall. If the burning of all the grazing land in these counties would insure the present crop of fruit and grapes, it would still be a question whether the sacrifice is desirable. It was the universal opinion among the men who met here to-day that no sum could adequately recompense them for the damage which will be inflicted if their valley ranges are burned. It will mean not only the loss of pasturage and starvation of animals, but it will absolutely mean the destruction of their business. Crops of fruit and grapes will grow next year, even if this year's crop is devoured by insects. When flocks and herds perish for lack of food, the industries represented by them perish. Other flocks and herds do not spring out of the ground next year, or the next. Until one examines the tax lists and finds out the number of head of stock which are assessed each year in these counties, and measures the quantities of butter and dairy products, the number of mutton and beef cattle annually sold, and takes into consideration the value at present prices of the herds of cattle and flocks of sheep belonging to these counties, he will have but an imperfect idea of the value of these industries. To destroy such industries for the sake of merely making an experiment to save other industries, or rather a season's crop of other industries, seems almost wanton to those who can look at both sides of the question.

**CLAIMED TO BE TOO LATE.**—Admitting, for the sake of argument, that all grasshoppers that are menacing the trees and vines were hatched from eggs which were laid on the grasslands of the foothills. Is this a valid argument for destroying the grasslands after the insects have gone to the lowlands? It may be wise to pass laws providing for scientific examination of the breeding places of these pests, and for the destruction of the eggs another

season, but it is sheer madness to ruin these splendid industries this year, when everybody knows it is too late to do any real good by fire. It is not true that all the grasshoppers come from the foothill ranges of El Dorado and Sacramento counties, nor is it true that the danger would have been averted if every foot of grassland had been burned over early in the spring. Reports from other counties show that the grasshopper pest is menacing widely divergent portions of the State. It seems to be the well-known and dreaded calamity called a "grasshopper year." A little later on grasshoppers will rain from the very skies. They will come from no one knows where. They will come from counties where no one thought of burning grasslands.

The stockmen have been and many of them are still busy bringing their herds and flocks to the mountains. They are not able at present to protect their valley ranges in person. They must appeal to their friends and neighbors to exercise good sense and justice in this matter of burning ranges. If fires are started indiscriminately, there will be no one to protect fences, houses and improvements. It is folly to say that the authorities can defend the homes of the ranchmen during their absence; but

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if the ranges must be burned there will be no need for the homes. The stockmen sympathize with the horticulturists but frankly state that they can not see why the grazing lands should be destroyed at this late day. As a matter of fact, there are many reasons why the uplands should not be destroyed until such time as it is certain the destruction is legal. When the miners destroyed the lands of the farmers, or threatened to destroy them, there was ample protection found in the courts. When interests conflict, it is not safe to destroy one great industry that another may thrive, unless the laws be very specific on the subject.

PAGE

### THE HIRED MAN

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## THE HOME CIRCLE.

## Nobility.

True worth is being, not seeming,  
In doing each day that goes by  
Some little good, not in the dreaming  
Of great things to do by and by,  
For whatever men say in blindness  
And spite of the fancies of youth,  
There's nothing so kingly as kindness  
And nothing so royal as truth.

We get back our mete as we measure—  
We can not do wrong and feel right,  
Nor can we give pain and feel pleasure,  
For justice avenges each slight.  
The air for the wing of the sparrow,  
The bush for the robin and wren,  
But always the path that is narrow  
And straight for the children of men.  
—Alice Cary.

## A Bond of Honor.

The Red Cross flag, beneath the stars and stripes, floated over the tent at the door of which David Hall, hospital steward, stood sealing a letter. He was keeping an eye on the orderly who was coming for the mail, but he glanced again at the address and read it half aloud:

"Mrs. Caroline Tracy,  
"Swift Falls,  
"Vermont."

The older man lying on the cot within the tent watched the tall lad with some amazement.

"Sweetheart?" he asked, with a significant smile.

"No," replied Dave; "I haven't any sweetheart, Styles."

The older man's glance met the clear, smiling eyes of the lad.

"Mother?" The query was more subdued.

Dave Hall's lips tightened, and he turned away.

"I haven't any mother—now," he said; and then, suddenly resuming his wonted cheerfulness, he sank into his seat beside the patient. "That letter and the others you've seen me mail went to the dear old lady to whom I'm indebted for my start in life. She hasn't anybody but me in the world; she had a son once, but something vague and untraceable ended his history years ago. I—we used to do what we could for her when she was poor; then an old uncle or cousin died and left her his estate, and since then she's been entirely devoted to me. She is paying all my college expenses, and says that she will leave me her little fortune when—"

"Good for you!" said the man on the cot. "I don't doubt that you deserve it, though; you've been a trump to stay here by me as you have done. How long have you been at college?"

"Just a year."

"How old are you?"

"Eighteen," was the reply.

"Twenty years younger than I am," said the man, in a musing tone. Then, with renewed interest, he asked: "Say, lad, what brought you here, anyhow?"

"The burst of the war bombshell, of course; the same thing that set you jumping, no doubt. I couldn't miss it, and when Doctor Moore of our college was appointed army surgeon, he suggested that I come along in the Hospital Corps and help him patch up damaged Americans. I think it's better for me than making war on the Filipinos would be. It has given me valuable experience that I never would have acquired otherwise."

The man watched him with narrowing eyes.

"You're made of fine stuff, old chap," he said; "but how did the old lady like letting you go?"

"Oh, of course, she's lonely," replied Dave. "She hasn't any one but me, you know. One of her proudest boasts is that she was a soldier's wife, so she didn't protest too much against my plan. But, here, I'm letting you talk too much. What do you suppose the surgeon will say if he finds me talking at this length to you?"

"Never mind, my boy; I'll settle with him. Maybe it won't make much difference, anyhow. I heard him talking outside the tent last evening—his

voice isn't as gentle as yours—and he was saying that a man who had led such a life as my condition indicated, couldn't stand much of a show to get well under the circumstances. There, now, lad," as Dave put in a word of protest, "don't try to alter the case. He's right, of course."

"Oh, not of course, Styles!" said Dave. "Walton and his battalion will be along here any time now, and then we can move all the sick to the city. You may be as well as ever after you go home."

"Home?" The man lingered over the word. "I haven't been home for fifteen years, but if I live I will go back again. It's a poor little cottage, and I thought it too small to hold me once. I left my mother there alone, and drifted West. I followed every wild thing that came my way, and that sort of life doesn't tend to elevate a man. Then came the war, and, remembering that my father had been a soldier, I enlisted and resolved to pick myself up out of the mire. But here I am done for, and I haven't fired a single shot!"

Dave tried to put in a soothing word, for the man's eyes had grown strangely bright with excitement.

"Your opportunity may come, Styles," he said, but the man interrupted him.

"I think the surgeon was about right, sonny. Talking does seem to tire me. Say, Dave, if it's not too much trouble, will you write a letter to my mother for me? Tell her that I'm coming home; that—oh, well, you know what to say."

Dave assented, and for a little while the silence in the tent was broken only by the scratching of the young hospital steward's pen. Presently he raised his head and read aloud what he had written.

"Anything more, now?" he asked. "Just 'Your loving son, Samuel Styles,' eh?"

"The man laughed.

"Not Sam Styles, lad. I've carried that name through some pretty tough scenes, but we'll drop it here. Sign the thing 'Sam' and address it to 'Mrs. Caroline Tracy, Swift Falls, Vermont.'" He turned wearily toward the wall as he spoke, and closed his eyes.

David Hall sat staring, dumbfounded, too much surprised to speak or move. A cold chill passed over him as he realized what this sudden disclosure meant. This man, rough and coarse, bearing upon his wasted face, the marks of an evil, wild life, was the son of the dear old lady who had been so much to David. He would come, in his rough, blustering way, to the home that she had made so pleasant—for Dave; he would reap the benefit of all that she had planned—for Dave.

The boy rose, and softly stepped to the door of the tent, striving to think clearly. The chill had now given place to a burning fever. He saw his home, his prospects and his profession swept away out of his reach, and their loss meant the overthrow of his life's ambitions. He crushed the letter fiercely in his hand, with a mad thought that he would not surrender to this wretched outcast; he would not send the letter, and it was probable that Styles would never—then, suddenly, his upturned eyes caught sight of the flying folds of Old Glory, and below it the standard of the Red Cross, and he humbly bared his head in a silent resolve to be true to the principles for which those banners stood.

Then a flood of softer emotions came to strengthen him. It was not so long since he had known the tenderness of a mother's love, and he knew what joy it would be to this dear old lady to receive her son again into her arms. How often she had spoken, with tears in her eyes, of Sammy!

"Perhaps if we had had more to make the home comfortable he would not have gone away from me," she would say, "but the little cottage was so bare!"

Well, the cottage was not bare now; there was enough to give Sam all the comforts he could desire, Dave thought, as he smoothed again the crumpled letter.

A cry from within the tent recalled him. He stepped to the patient's side,

but there was no reason in the eyes that looked up at him. The man was babbling a broken string of disconnected speeches, and Dave bent over him in deep concern. There was nothing for it but to send in haste for Doctor Moore, but when he came he set Dave's self-reproach aside by explaining that he had expected this turn in the case, and that nothing could have prevented it.

"It's most unfortunate, however," said the doctor. "I have orders to report at Kinola, and leave Doctor Lang here in charge, but none of the fellows will treat this poor chap as well as you have. Of course, you go with me."

Dave looked up quickly.

"If it's all the same to you, doctor, I'd like to stay with him for awhile."

"Oh, come, lad, this wreck of a man isn't worth it! You've been here too long as it is. That unhealthy mist from the moat is making you look rather white already. Aren't you well?"

"Yes, oh, yes! Nothing wrong with me, doctor," was the reply, given as cheerily as possible.

The doctor's searching glance was fixed on the lad's face.

"I promised Mrs. Tracy to keep my eye on you, you know. You're all she has, and—"

"Not all, doctor," interrupted Dave in a husky whisper. "She has him, too!" He pointed to the patient, lying quiet for a moment on the cot.

The doctor looked with a puzzled frown, from the patient to the young hospital steward.

"Him?" he said—"Styles?"

Dave nodded. "Styles," he said, with an attempt as a smile—"Styles is Sam Tracy."

The doctor uttered an exclamation of amazement, and stood looking down at the man.

Dave drew a long breath and straightened up.

"You know how I feel about it," he said looking steadily into the doctor's eyes. "I'll stay here and pull him through, if possible—it's—a bond of honor."

The doctor laid his hand on Dave's shoulder in a firm, kind grip.

"Well, try it, lad," he said. "I don't like leaving you here, but if things go well with Styles, you can send him on to the city with the rest of the sick, and then join me at Kinola. Walton and his battalion will be alone here in a day or two, anyhow; it wouldn't be safe to try to move these poor fellows under the handful of men that the Colonel could furnish for an escort. The natives around here are becoming very troublesome and you know how much respect they have for the Red Cross flag."

"They'll scatter as soon as Walton comes," Dave answered with confidence, as he walked with the surgeon toward the door of the tent. "The men say that the impetuous way that he has of dashing along at the head of the troops scares the natives out of all thought of fight."

The voice of the patient rose high in a constant babble, with but one clear theme running through it:

"I haven't fired a single shot! I haven't fired a single shot!"

"Yes, he's a daring horseman and a splendid soldier," said the doctor, replying to Dave, but with his eyes on the cot. Then with an intent look into the lad's face, he asked:

"You're sure you don't want to come with me, Dave?"

"I'm sure, doctor," was the steady rejoinder. "I'll stay here, for her sake, with him."

Three heavy days went by, for the natives grew more bold as their numbers increased, and Walton did not come. Alarming rumors floated in and around the tent where Dave Hall watched night and day beside his patient. No gleam of reason had come to the man; always that senseless babble, and the complaining murmur, "I haven't fired a single shot!"

On the fourth morning the camp was astir with a new alarm. The natives had surprised the camp with an attack. There was a hurry and confusion on all sides; there had been no indication that the natives would attempt so bold a move, but David Hall's heart sank as he listened to the sounds of the battle

from the plain below. He stood at the door of the tent and his anxiety grew with every moment; presently the stress of the situation drew him down the slope, to a point from which he could watch the movement of the battle. He was so absorbed in the fortunes of his comrades that he did not see Styles, wild-eyed and weak, stagger out of the tent and over to where the surgeon's horse was tied beneath a tree.

David's intent gaze was upon the natives as they steadily advanced; the defense was breaking, losing ground with every moment. There was an effort on the part of the men to hold together and close around the hospital tents, but the suddenness of the attack made even this movement uncertain.

Suddenly from the hill road came a signal of pistol shots; then Dave heard the clatter of a horse's hoofs on the bridge above, and a single horseman was seen rapidly crossing the open stretch of road along the hill slope. The rider disappeared, as the downward curve of the road wound under the trees, but his appearance had a magical effect on the all but defeated men.

"Walton! Walton!" came the enthusiastic cry, as the men drew together again.

"Walton! Walton!" The plain rang with the name, and the natives, in confusion, broke and fell back, scattering as they ran.

"Walton!"

David Hall had taken up the cheer, and he ran up the road to greet the dashing horseman whose picturesque heroism had made him famous in the island warfare.

The horseman came on at a splendid gallop, but as he approached, Dave saw him sway in the saddle. Then, fixing an intent gaze on the rider, he recognized, not the dashing commander, Walton, but his patient, Sam Styles. The next moment Dave was out in the middle of the road, catching at the bridle of the plunging horse, urged to its highest speed by its mad rider. Before he could get the animal under control, Styles swayed again in the saddle, and fell at the lad's feet.

The boy was down beside him in an instant to raise his head, and the man's eyes opened on Dave's face of amazement and concern.

"Not a single shot!" he began, but Dave hastily broke in:

"Why, Styles, they broke and ran before you! You've routed them all, but how did you—"

A ghastly change came over the man's face.

"Are they running?" he gasped. "Then tell her—my mother—she was proud of being a soldier's wife—and now—she needn't be ashamed—of having been also—a soldier's mother. I know, she was your old lady—too—"

His head sank, but the eyes opened again for an instant.

"Good-bye!" he said, with a faint smile, and Dave, meeting the last friendly look of the dim eyes, whispered:

"Brother!"

Then a gasp told the young hospital steward that all was over.—Charlotte Canty in *The American Boy*.

## Breathe Through Your Nose.

In all kinds of atmosphere the breath should only be inhaled through the nose. An occasional breath of extra pure air through the mouth may be good; but in cars and most offices and rooms nose breathing is essential. A second rule is, since so much time is spent in cars and offices and rooms in earning a livelihood, and since these places are overheated and under-ventilated—the heating and ventilation being out of the control of most of us—we must take in fresh air whenever possible, in order that we may restore the balance. The best times to do this will be early in the morning, when the air is freshest, and late at night, when deep breathing will help us to get sleep. We may breathe correctly while we are waiting in a street, and especially where streets meet. We can soon form an automatic habit of breathing properly on such occasions.—Chambers' Journal.



### The Proper Way to Sit.

Nearly everybody knows how to sit down. It is one of the easiest things there is.

But the majority of people don't know how to sit down properly. And few indeed know how to sit down fashionably. Sitting down fashionably is sitting down properly, with a few wrinkles added.

Dame Fashion decrees that a young woman who is about to sit down should walk straight at the chair in the first place. The chair may not be approached from the side and slid into. Look at it, measure the distance, and then turn. Under no circumstances stop talking when sitting down fashionably, lest you seem unaccustomed to do so.

The turn is the crux of the whole manoeuvre. On reaching the chair slide the right foot across and in front of the left. The slide across of the right foot is made with the foot on the floor. When the right foot has crossed the left, raise the heel from the floor and turn towards the right on the ball of the foot. Turn the shoulder around on the left shoulder as a pivot and permit the lower body to follow around. The knees should be slightly bent. When completely turned around gently lower yourself into the chair, the chief weight being on the right foot.

As you sit bend the body slightly forward, keeping one toe advanced. Adjust yourself immediately to a comfortable position, so that you will not have to be fidgeting around for several minutes after you have first sunk into the chair.

When completely seated the body should form a right triangle. Do not lean against the back of the chair, and do not lean forward with your elbows on your knees.

In your attempts to seem at ease do not lounge back in your chair so that you are practically sitting on your shoulder blades. The spine must be kept straight.

And, of course, you must never, under any circumstances, cross your legs.

If you are short and plump you will need to sit on the edge of the chair to look graceful. It is better in such a case to keep one leg fairly straight, while the other knee is bent slightly and the foot is drawn somewhat under the chair. Turn somewhat in the chair.

Talking to some one behind you produces discomfort, and probably, lack of grace. Either make the person behind you come around to the front, or else turn your chair around. Of course, sometimes you can do neither, as in a theatre chair. If you will talk in such cases, it is best to put the end of your elbow on the back of your own chair and lean away from it.

When arising from a chair, first lean forward, exactly reversing the sitting-down motion. Your weight falls first on your heels, as you start to get up, and is gradually transferred to the balls of the feet as you arise. When you are at your full height, balance yourself for an instant before starting to walk.

### Gorilla Hunting.

Gorilla hunting is a distinct sensation even for the veteran hunter. This animal, which has become confused somewhat with fable and fiction, is a reality and a decidedly unpleasant one to engage. The West Africans are mortally afraid of it, believing that the brute contains the spirit of a man. They attribute to it all sorts of ferocities, like the carrying off of a human being, who is permitted to return after being deprived of toenails and fingernails.

Skilled hunters have never observed any of these doings, but they testify to the brute's strength and ferocity. According to a French sportsman, a full-grown gorilla can bite through a tree six inches thick in order to secure the sap, and twist a gunbarrel with the swollen bunches of muscle that serve for arms. His roar is terrifying, and can be heard for a distance of three miles.

"I shall never forget how the first one impressed me," says the Frenchman, "for I had a bad attack of shakes. The woods had been filled for

some time with a barking roar, but I saw nothing until my guide clucked softly and pointed to a tree, alongside which stood an immense male gorilla. There he remained, but twelve yards away, boldly facing us with his huge, chest, muscular arms, fiercely glaring deep gray eyes and a hellish expression until I moved.

"At that he dropped to all fours and came six yards nearer, sitting up to beat his breast with his huge fists—a defiance—so that it sounded like an immense drum. His roar was most singular, beginning with a kind of bark and deepening into a bass roll that literally resembled thunder. The short hair on his forehead was twitching, his powerful fangs showed unpleasantly, and, feeling he was about to attack, and incidentally being scared green, I shot him through the heart. With a groan, something human and yet brutish, he fell on his face and died quickly, like a man. He measured five feet nine inches in length, his chest was sixty-two inches and his arms spread nine feet. I was glad to have the specimen, but somehow after that never cared to kill a gorilla unless he actually menaced me."—Allen Sanger in Ainslee's.

### Training Wild Animals.

I suppose we shall have to rid ourselves of the notion that looking a lion in the eye will break his proud spirit and send him slinking into a corner embarrassed to death, says Harvey Sutherland in Ainslee's. I have tried to stare lions out of countenance—from this side of the bars, of course—and they stood it for as much as five minutes before they turned away with a supercilious expression that seemed to say: "Well, I hope you'll know me next time you see me! The idea of that whiffet trying to make a mash on me!" I am convinced that in those five minutes, if I had been inside the cage, I should have been completely unfitted for business.

Another notion is that wild animals are unreasonably afraid of fire. They are not more afraid of fire than any other strange thing, and when they learn how it can hurt—well, even we will move over the least little bit to avoid a red-hot poker.

There have been great improvements in the art of training wild animals within the last few years. Merely to go into the cage and hold its occupants at bay for a few minutes while attendants with sizzling hot bars stood ready to thrust them in and quell an outbreak was considered the top-notch of achievement not so very long ago. But nowadays they build big cages in which there is room for lions and tigers to do all sorts of tricks, even to riding on horseback, and many feats are performed that would have been scouted as impossible ten years ago.

I have heard that this was because so many more wild beasts had been reared in captivity. They had become used to the sight of men and, never having been out nights, they did not know what life meant. I talked this over to Mr. William M. Snyder, who has charge of the animals in Central Park, particularly the elephants, and who has had a long and varied experience in breaking all kinds of creatures for circus performances. He laughed the notion to scorn.

"We have learned how to breed these wild animals in captivity," he said. "It is largely a matter of giving them the food and the opportunity they have in their natural state. The only advantage aside from the added information about their life history has been that they come cheaper to raise than to capture. They aren't a bit tamer. They aren't so easy to manage. It is the same with them as it is with us. Familiarity breeds contempt. A lion right out of the jungle is scared half to death by everything around him here, and can be cowed into doing what you want easier than a cub that has always seen men and does not know they can hurt him. As far as being gentler is concerned, savageness is part of their nature. I have seen lion cubs with their eyes just opened that would spit and strike at

you as viciously as any grown-up jungle beast. By the way, lions open their eyes within three or four days after birth. Domestic kittens don't open theirs short of from eight to twelve days. That's something you won't find in the books. Another thing, the books say that a young lion doesn't begin to grow a mane until he is three years old. I have seen the mane start when they were less than a year old."

### June Floral Suggestions.

The weeds will take possession of your flower beds if you do not take possession of the weeds. Make it an aim, at least once every week, to go over the ground with hoe and weeder and eliminate everything that does not belong there, says Benj. B. Ketch in Vicks. If weeds are allowed to go unmolested they not only crowd and choke the plants, but they also go to seed and produce dozens of similar weeds next season. You can save yourself and your flowers a great deal of future trouble by getting rid of each weed as soon as discovered. Half the pleasure of a flower garden is in having it neat, trim and free from weeds. During this month the seedlings that you have been raising in the bed or window garden should be transplanted to the open ground. Generally there are no killing frosts after the 10th and the work may be accomplished satisfactorily. Have the ground enriched and spaded beforehand; mellow the soil well and rake it off smooth. Do the transplanting in the evening or on a day when the sun doesn't shine brightly. Water each plantlet thoroughly as you set it out and draw a little dry dirt up around it to retain the moisture. The next day it may be necessary to shade the seedlings with newspapers, and it will probably be necessary to see to them frequently until they get big enough to see to themselves. During this month there is generally quite a bit of hot, dry weather, and unless you tend to them regularly the iron reservoir vases on the lawn are liable to suffer greatly from the lack of moisture. Water should be given frequently and thoroughly to plants in such receptacles, for the moisture dries very rapidly from the soil. You need not be afraid of giving them too much water, for in the cramped quarters the plants will absorb a great deal of moisture in a short time. The same may be said of plants in veranda boxes and plants, such as palms, ficuses, etc., that are placed around the verandas for ornamentation. These plants, together with ferns, abutilons, hydrangeas, etc., should be thoroughly showered every week and sometimes oftener. If the specimens are large do not depend on an ordinary whisk broom or plant sprayer.

CUSTOMER: "I believe you are the man of whom I bought this cane?" PROPRIETOR: "Yes, I sold you that cane." CUSTOMER: "And you said the handle was of genuine ivory, and I find that it is artificial." PROPRIETOR: "I can't help it, sir. I import my ivory direct from Ceylon, and the only explanation I can give is that the elephants have taken to wearing false tusks."

MRS. WINKS: "A peddler was here to-day, and I got the greatest bargain—a whole pound of insect powder for only ten cents. It looks just like dirt, but it's awfully effective. I tried it." MR. WINKS: "Worked, eh?" MRS. WINKS: "Yes, indeed. The peddler said I should put a little in water and apply it boiling hot, and I did, and it killed every insect it touched."

MRS. JONES: "Just think of it! That fellow came in and actually stole the clock right off the mantelpiece." MRS. BROWN: "And your dog was in the very same room?" MRS. JONES: "Yes, but that didn't count. Fido is only a watch dog, you know."

When blacking fails to adhere to a stove, try putting a little sugar into it, stirring it well.

## DOMESTIC ECONOMY.

### Domestic Hints.

A refreshing drink can be made of crushed strawberries, cherries or currants. Cook a quart of fruit with a pint of water until well softened, then strain and press out the juice through a heavy cloth. When cold sweeten and dilute to taste and serve in glasses filled with cracked ice.

PICKLED CHERRIES.—Stone ripe cherries and cover with vinegar. Let them stand for twenty-four hours, then drain off the vinegar and add one pound granulated sugar to one pint of the fruit. Mix thoroughly, and put away in jars. They will keep perfectly without sealing and are delicious.

EGG LEMONADE.—In one pint of water dissolve a half pound of granulated sugar, and add the juice of four large lemons and a cupful of cracked ice. Have ready the yolks and whites of four fresh eggs beaten separately, the whites until stiff and dry. Stir in the yolks with the lemonade and lastly the whites. Serve in lemonade glasses.

BEEF PIE WITH POTATO CRUST.—Into a stewpan put slices of cold roast beef (enough to fill the baking dish you will use) a little gravy or stock, a lump of butter, a slice of onion, salt and pepper. If there is not enough gravy add hot water; dredge in one tablespoonful of flour; cover and stew gently. Put this into a baking dish, and cover the top with hot mashed potato. Brush over with egg, and place in the oven long enough to brown the crust.

STRAWBERRY CREAM SAGO.—One cup sago soaked three hours or longer in one-half pint cold water, one-half cup sugar and a little salt. Put the soaked sago into a double boiler with one-half pint warm water, one-half pint of juice from the strawberries and cook slowly until clear. When clear add one large cup of berries and more sugar if needed. Mold and serve very cold. Make a sauce of one-half pint sweetened and whipped cream with the remainder of the berries, one large cupful.

POTATO OMELET.—Cut cold boiled potatoes into dice a quarter of an inch square; mix them with enough white sauce to well moisten them. Place a tablespoonful of butter in a frying pan; when the butter is hot put in the potatoes and saute them until browned on the bottom, loosen them from the pan, and turn like an omelet into a flat dish; or this preparation may be put in a baking dish, sprinkled with crumbs and grated cheese, then put in the oven to brown, and serve in the same dish.

CABINET PUDDING.—Beat two eggs, add a pint and a half of milk to them, grease a pudding mould, sprinkle the bottom with raisins or chopped citron, then put in a layer of cake and a sprinkle of fruit, and continue with cake and fruit until one quart of crumbs are used; add one teaspoonful of vanilla extract and a pinch of salt to the eggs. Pour the liquid over the crumbs, and put the cover on the mould. Let stand fifteen minutes, then place the mould in a pan of boiling water, and boil for one hour; turn out and serve with lemon sauce.

### Hints to Housekeepers.

Buttermilk, for some forms of indigestion, is the cooling, healing agent that starts one healthward; also, one teaspoonful of pure olive oil, taken after each meal.

Any tin pans or dishes, if rubbed over with fresh lard and heated thoroughly in the oven, will never rust afterward. Thus treated, any tinware can be constantly put in water and yet remain comparatively bright and quite free from rust.

Iced tea, like all tea, is better when it is brewed fresh. That is, it should not stand too long before using—say an hour. Put into a large pitcher a solid piece of ice and pour over the tea, adding the juice of two lemons, strained, to a quart of tea; also a scant cup of granulated sugar. Serve in thin glasses.



### Kings County Ordinance About Moving Bees.

Following is the text of the bee ordinance passed by the Kings county Board of Supervisors at their last session:

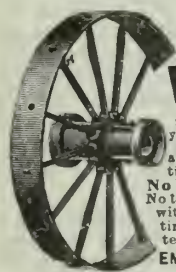
SEC. 1. From and after the 23rd day of June, 1902, it shall be unlawful for any person, firm or corporation to ship, haul, transport, bring or in any way to deliver into this, the county of Kings, State of California, any bees, except the queen bee, transported or sent through the United States mail, without first notifying the County Inspector of Apiaries, or his authorized deputy, of the arrival of said bees, and obtain a written certificate from said inspector or his deputy that said bees are free from that certain disease known as "foul brood," or any other disease which is infectious or contagious in its nature and injurious to bees, their eggs or larvae, and every person, firm or corporation who receives or accepts the same in the county of Kings, without forthwith notifying said Inspector of Apiaries, or his authorized deputy, of the arrival of said bees, and obtain the written certificate of said inspector, or his deputy, certifying that said bees are free from disease, as herein provided, shall be guilty of a violation of this ordinance.

SEC. 2. Every person, firm or corporation violating any of the provisions of this ordinance shall be guilty of a misdemeanor.

#### Yearling Sale.

A telegram states that the sale of the Haggin yearlings in New York closed on Wednesday of this week and a total of \$216,700 was realized on the lot, an average of over \$1500 a head. Sydney Paget secured the star of the sale for \$4500. He is a bay colt by imp. St. Gatien-Turmoil. Green Morris paid \$3000 for a colt by imp. Golden Garter-Tourmaline. A Bassetlaw-Victoria Cross colt went to Mr. Paget for \$3200. This sort of property seems to be looking up again.

How are all at home? Buy a bottle of Pain-killer to-day and you will be insured against cholera morbus, diarrhoea and kindred troubles. The old reliable Perry Davis' Painkiller is sold by all dealers. 25c. and 50c. bottles.



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any size wanted, any width of tire. Hubs to fit any axle. No blacksmith's bills to pay. No tires to reset. Fit your old wagon with low steel wheels with wide tires at low price. Our catalogue tells you how to do it. Address: EMPIRE MFG. CO., Quincy, Ill.

### WIRE Cattle Poultry Hog FENCE

Strongest and best Field Fence on the market  
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How to Train and Drive Him, with Reminiscences of the Trotting Turf.



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#### New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR WEEK ENDING JUNE 10, 1902.

701,840.—TYPEWRITER—H. B. Cary, Los Angeles, Cal.  
702,123.—WELL CASING PERFORATOR—T. E. Clark, Visalia, Cal.  
701,859.—CONCENTRATOR—W. E. Dodd, S. F.  
702,049.—FIRE STARTER—Draper & Lyon, Oakland, Cal.  
702,092.—GAS GENERATOR—A. W. Edwards, Sacramento, Cal.  
702,197.—TUBE MACHINE—J. J. Garrity, Pinole, Cal.  
701,871.—SEWING MACHINE—A. Giacomini, S. F.  
701,872.—SEWING MACHINE—A. Giacomini, S. F.  
702,008.—OIL BURNER—A. Johnson, S. F.  
702,009.—MAKING CEMENT—F. G. Jordan, Spokane, Wash.  
702,102.—BEDSTEAD JOINT—J. R. Konetsky, S. F.  
702,370.—BED RAIL—E. G. Lundquist, Los Angeles, Cal.  
702,023.—DISC PLOW—F. M. Mecum, Chico, Cal.  
702,024.—HOOP LUG—R. B. Moore, S. F.  
702,071.—HARROWS—N. Paulsen, Jolon, Cal.  
702,377.—OIL BURNER—J. B. Payne, Hanford, Cal.  
702,073.—DENTAL TOOL—E. O. Pieper, San Jose, Cal.  
702,079.—PIPE WRENCH—G. H. Swarthout, Placerville, Cal.  
702,270.—WEATHER STRIP—B. M. Whiting, Spokane, Wash.

#### Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

STORM APRON FOR VEHICLES.—No. 701,614 June 3, 1902. W. G. Reese, Oakland, Cal. The object of this invention is to provide an apron for the front of vehicles which by its peculiar shape serves to shed rain and snow and prevent its getting into the vehicle or upon the occupants. The apron has a pocket in front which is adapted to fit over the dashboard and it extends down upon each side thereof. The front portion has angular extensions and in connection with these extensions a body portion, the edges being so connected that when the apron is drawn up in front it forms a central ridge or apex so that the water is diverted to flow on either side and is prevented from settling into pockets of depressions which may be formed in the apron. The shape also enables it to fit closely along the sides to prevent its being blown up by wind.

SAW FILING DEVICE.—No. 701,700. June 3, 1902. J. H. L. and G. A. W. Folkers, San Francisco, Cal. This device consists of a frame to be rigidly secured to a support and horizontal guide bar against which the side portion of the saw is to be held, a filing carriage standing over the saw and reciprocal along the guide and having oppositely rotatable filing members adapted to engage the teeth of the saw; a bar below the guide and parallel therewith serves as a lateral support for the lower portion of the carriage.

HOOP LUG.—No. 702,024 June 10, 1902 R. B. Moore, San Francisco, Cal. The object of this invention is to provide a means for connecting the ends of hoops or rods which are employed for holding the staves of tanks and conduits together. It consists of a lug having one end adapted to embrace the head end of a hoop bolt, a plurality of bifurcated radially disposed projections on the block and means by which the opposite end of the bolt is adapted to be engaged and guided and held between the projections so as to adjust the length of the bolt; the hoop being tightened by means of nuts screwed upon its threaded end and abutting against the lugs.

DISC PLOW ATTACHMENT.—No. 702,022. June 10, 1902. F. M. Mecum, Chico, Cal. This invention is applicable to that class of plows in which concavo-convex disks are journaled and revolvable upon a suitable frame and it consists in means for changing the lines of travel of the bearing wheels so that the plows may be held up to their work and to regulate the width of furrows cut by them. A swinging draft pole is also connected that the wheels may be turned in unison with the movement of the pole, and in connection with this is a means for multiplying the rate of movement of the wheels with relation to that of the pole. Means are also provided for raising and lowering the frame.



OAKLAND Poultry Yards.  
Breeder of all Leading Varieties of Fowls.  
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Manufacturers of Pacific Incubator and Brooder.  
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The worst possible spavin can be cured in 45 minutes. Ringbones, Curbs and Splints just as quick. Not painful and never fails. Detailed information about this new method sent free to horse owners. Write today. Ask for pamphlet No. 95 Fleming Bros., Chemists, Union Stock Yds., Chicago.

### THE NEW EGG FARM.

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A practical, reliable manual upon producing eggs and poultry for market as a profitable business enterprise, either by itself or connected with other branches of agriculture. It tells all about how to feed and manage, how to breed and select incubators and brooders, its labor-saving devices etc. 12mo., 331 pp., 140 original illustrations cloth. Price, \$1 postpaid.

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330 Market St., San Francisco, Cal.

### Breeders' Directory.

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HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr. old classes, except 1st on 2-yr. old in 1896. Last year every butter prize awarded won by my herd, except 2nd for 2-yr. olds, 21 Jerseys and Durhams competing. F. H. Burke, 30 Montgomery St., S. F.

A J C C. JERSEYS. Service bulls of noted strains Joseph Maillard, San Geronimo, Marin Co., Cal.

JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Hogs. Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1878

9 SHORT-HORNED DURHAM BULLS FOR SALE. Address E. S. Driver, Antelope, Cal.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER SAXE & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

J. H. GLIDE, Sacramento, Cal. Have 70 choice Durham Bulls for sale

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POLAND-CHINA PIGS.—Write us for prices on sows and boar not related. Sweepstakes herd—State Fair. S. P. Lindgren & Sons, Kingsburg, Cal.

FOR SALE.—Reg'd Poland-China and Large Eng. Berkshire Pigs, both sexes. Sutton Bros, Lodi.

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POLAND-CHINA BOARS. C. A. Stowe, Stockton.

P. H. MURPHY, Perkins, Sac. Co., Cal. Breeder of Shorthorn Cattle and Poland-China Hogs.

ASHLEY BROS., Linden, San Joaquin Co., Cal. Breed Poland-China and Berkshire Hogs.

#### BREEDERS' SUPPLIES.

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of pigs is coming on in good shape and we will soon be able to ship March, April and May litters whose sires and dams carry the blood of the most noted families in this country and England. We can furnish both BERKSHIRES and POLAND-CHINAS, with a large number to select from. Write for what you want and we believe we can please you.

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Young Stock for Sale. LOVELOCK, NEVADA.

1. \$2200 buys 65 acres choice sandy land, on railroad, 6 miles from Merced, Cal. Depot on land. Don't wait for your hat if you want a bargain.  
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3. 9-acre ranch, nicely improved, very rich land, only 1 mile from town. Price low for quick sale. Address E. M. MILLS, Merced, Cal.

1. 80 acres, Placer Co., Calif., \$800.  
2. 160 acres, Placer and Nevada Cos., \$1600.  
3. 608 acres, Nevada Co., adjoining No. 2, \$7,296.  
4. 120 acres, Nevada Co., near Nos. 2 and 3, \$1200.  
All the above tracts are well wooded and watered; is a deep red soil suitable for fruit, and is in the thermal belt. R. R. station within 3 miles of each tract.  
5. 1055 1/2 acres upland and 794 1/2 acres tule land in Solano Co. Being a portion of Reclamation District. \$536  
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### 80 Acres All Rich Valley Land.

Good house of seven rooms and bath, and other buildings. Located one mile from St. Helena, Napa Co., near school and R. R. station. Price reasonable. Address H. J. LEWELLING, St. Helena, Cal.

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### FOR SALE In Subdivisions.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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## KENDALL'S SPAVIN CURE



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**Great Results**  
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Dr. B. J. Kendall  
Co., My Dear Sirs:  
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The old reliable remedy for Spavins, Ringbones, Splints, Curbs and all forms of Lameness. It cures without a blister because it does not blister. Price \$1.50, 50¢. As a liniment for family use it has no equal. Ask your druggist for KENDALL'S SPAVIN CURE, also "A Treatise on the Horse," the book free, or address DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.

### Some Postal Don'ts.

"It is astonishing how questions pour in regarding mail matter and its treatment," said a postal official, "and it shows on the part of the general public a woful lack of information with which it should be familiar. I have from time to time jotted down some postal 'don'ts' which will be found of value.

"Don't mail your letter without placing at least one 2-cent postage stamp thereon. Of course, you will say that you always do this, but there were 150,000 patrons of the mails last year who did not.

"Don't fail to write the name and address of the person for whom your letter or package is intended plainly on the envelope or face of the package. You may find comfort in the knowledge that more than 100,000 pieces of mail matter without a line of superscription were received last year at the dead letter office in Washington.

"Don't send loose coin in envelopes. If it is not stolen it often works out of corners. Don't send bills either. If the postal thief who steals your money is caught he will go to prison, and you will be the cause of it. Use the money order or the registry system when you wish to transmit money or valuable articles through the mails.

"Don't, if you have come from a foreign land, fail to place the correct address of your correspondent in the old country on the envelope. A quarter of a million of these incorrectly addressed foreign letters are annually returned to their senders, if their names and addresses can be obtained.

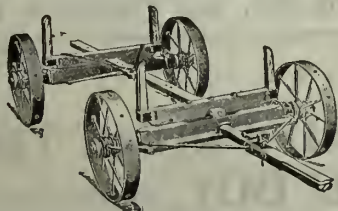
"Don't fail to place your name and address in your letter or on the envelope if you wish your missive returned to you in case of non-delivery. Some people send money, and say: 'From mother,' or 'From papa.' We all had mothers or fathers. No clew is afforded to either the sender or the addressee in case of non-delivery.

"Don't omit your name, your post-office or your State when writing to department stores in cities for goods. Many people do omit one or more of these essential particulars, sometimes all, and it causes confusion.

"Don't think you can beat the game when you receive a police letter from a stranger in a city telling you how to get rich quickly for nothing. You will be out of pocket and sadly fooled, if you entertain this popular belief.

"Don't fail to prepay full rate upon your foreign mail, both letters and packages, even though the former will go forward to destination without any prepayment of postage at all, and the latter if partially prepaid. Double post-

Surely as night follows day sickness follows the eating of unripe fruit or stale vegetables. Every housekeeper should keep Perry Davis' Pain-kil in the house in summer. It gives instant relief and speedy cure.



3 1/2" Thimble Skein. Warranted to Carry 4000 Lbs. Wheels 28" and 30" x 4".

ORDER AT ONCE AND YOU CAN HAVE ONE OF THEM FOR \$30.00.

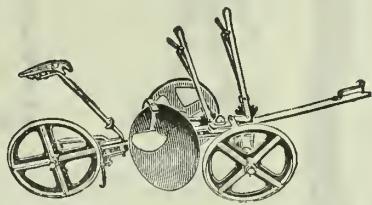
ALLISON, NEFF & CO., San Francisco, Cal.

age is collected abroad for the amount due.

"Don't forget with domestic mail that, while a letter will go forward if it has a single rate of postage paid thereon, 2 cents, the balance due to be collected of the addressee, newspapers and packages will not. They go to the dead letter office. People confuse these instances of foreign and domestic mail, and loss results.

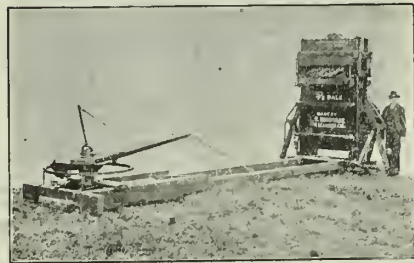
"Don't be so careless as not to seal the flap of your envelope, and if you fail to do this don't afterward complain to the department that 'somebody opened my letter.' Thousands of people do this every year.

"Don't forget that postal thieves do not get all of the money-letters which are not delivered. Some find their way to the dead letter office, about 50,000 annually, containing on an average of about \$50,000. Your money is returned to you if you can be located; otherwise your dollars help swell the postal fund in the treasury."—New York Sun.



The new Benicia-Hancock disc plow put out during the past season proved to be an unqualified success. In view of past failures on the part of Eastern manufacturers, the Benicia Agricultural Works may feel proud of their product. More were sold than anticipated, for the public had begun to think that the disc did not make a good plow. It is safe to assert that no disc plow can be a success unless made under the Hancock patents, which have just been sustained in an injunction suit brought against an imitator. Baker & Hamilton have established agencies over the greater part of several States. Write them at San Francisco, Cal., for particulars.

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## Dividend Notice.

MUTUAL SAVINGS BANK of San Francisco,  
33 Post Street.

For the half year ending June 30, 1902, a dividend has been declared at the rate of three (3) per cent per annum on all deposits, free of taxes, payable on and after Tuesday, July 1, 1902.

GEORGE A. STORY, Cashier.

## Dividend Notice.

CALIFORNIA SAFE DEPOSIT AND TRUST COMPANY.

CORNER CALIFORNIA AND MONTGOMERY STS.

For the six months ending June 30, 1902, dividends have been declared on deposits in the savings department of this Company, as follows: On term deposits at the rate of 3 1/2 per cent per annum, and on ordinary deposits at the rate of 3 per cent per annum, free of taxes and payable on and after Tuesday, July 1, 1902. Dividends unclaimed for are added to the principal after July 1, 1902.

J. DALZELL BROWN, Manager.

## Dividend Notice.

The German Savings and Loan Society,  
526 CALIFORNIA STREET.

For the half year ending with June 30, 1902, a dividend has been declared at the rate of three (3) per cent per annum on all deposits, free of taxes, payable on and after Tuesday, July 1, 1902.

GEORGE TOURNY, Secretary.

## Dividend Notice.

San Francisco Savings Union,  
532 CALIFORNIA STREET, Corner of Webb.

For the half year ending with the 30th of June, 1902, a dividend has been declared at the rate per annum of three and forty-two one-hundredths (3 42/100) per cent on term deposits, and three (3) per cent on ordinary deposits, free of taxes payable on and after Tuesday, July 1, 1902.

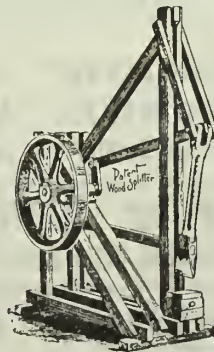
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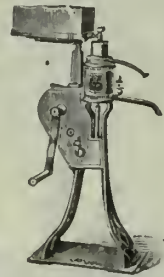
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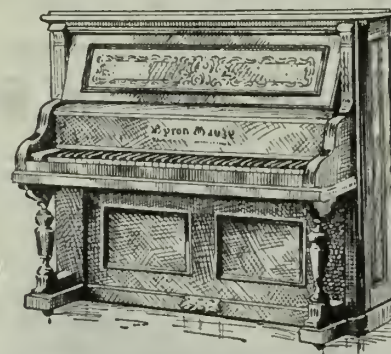
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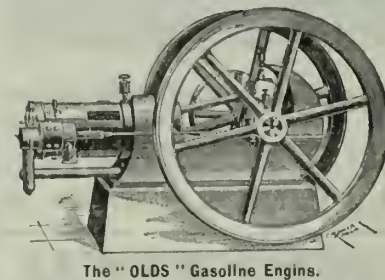
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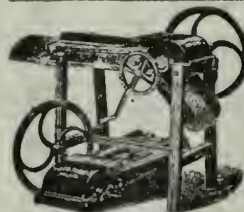
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## Agricultural Review.

### ALAMEDA.

**GRASS FIRE CAUSES LOSS.**—An extensive grass fire started Sunday afternoon on the Mendenhall ranch, 15 miles south-east of Livermore, and Tuesday was raging fiercely on the eastern slope of Cedar mountain. The fire, the result of carelessness on the part of campers, took an easterly course, burning over an area embracing about 5 miles in extent, destroying about one-half the dry feed on the Tickle, Jones, Clark, L'Ecqua, Mendenhall and James ranches, and greatly reducing the winter supply for stock in that region. A log cabin on the Jones ranch and some fencing was also burned. Several other dwellings in the path of the flames were saved by strenuous efforts of some of the ranchers, who fought the fire effectually for some time. At last accounts the fire was still burning in some of the down timber.

### CALAVERAS.

**TURKEYS GETTING FAT ON HOPPERS.**—Stockton Independent: Ex-Supervisor D. C. Shepherd, who has just returned from Milton, says that there are swarms of grasshoppers in that vicinity and that they are doing some damage, but are not destroying all vegetation. The turkeys and chickens are getting fat on the insects, and in the fields bands of turkeys can be seen chasing around after the hoppers.

### FRESNO.

**GRASSHOPPERS GOING FOR GRAPES AND ALFALFA.**—Democrat: B. Bienenfeld of San Francisco, who is interested in land holdings in the county, made up a party yesterday to visit one of the localities where the hoppers are doing damage. The place visited was that of Mr. Rasmussen in Perrin colony No. 2. It was found that the hoppers have hred in large numbers on a 640-acre tract of uncultivated land across the road and thence have made inroads upon his alfalfa patch and vineyard. Two weeks ago the alfalfa was knee high, but the pests have eaten it down to the roots. On one-third of the vineyard they have eaten off the leaves and green grapes, and in the center of the vineyard all the leaves have been stripped off clean. Mr. Rasmussen has endeavored to exterminate the hoppers by placing carbolic acid and crude petroleum in the water-filled irrigation ditches. The insects jump into this and are unable to extricate themselves, whereas in the water they easily swim across.

### GLENN.

**PRODUCTIVE SOIL.**—Willows Journal. S. Givens, who owns a small farm on the river, formerly a part of the Glenn ranch, has just harvested his potato crop. He reports that the yield of two acres was 250 sacks, which he sold at \$1.50 per hundred pounds. Each sack averaged 110 pounds, making the income from the two acres \$412.50.

### KINGS.

**CONTRACTING FOR WINE GRAPES.**—Hanford Journal: Lemoore is rejoicing over the prospect of having a \$40,000 winery building in operation for this year's crop of grapes. There are parties now contracting with grape growers for their crops of grapes for the next three years for \$13 a ton, providing they can get 2000 tons signed. It is reported that a large proportion of the amount is already signed.

### MENDOCINO.

**WOOL GROWERS JUBILANT.**—Ukiah Republican Press, June 20: The wool growers were jubilant yesterday over the prices they received for the product of their ranges. Wool brought, on an average, close to 19c. Some small lots were sold for 17½c., and some brought 19½c. The demand was good, and for the first time since the passage of the lamentable Wilson bill, offers were made on the first day of the sale.

### NAPA.

**CHERRIES BRING GOOD FIGURES.**—Register: A. D. Butler to-day received a letter from New York reporting the sale of cherries shipped from here May 30th. The New York dealer says: "The cherries were of very good quality and in fine condition and realized top price on market day. For Tartarians \$3.25 straight for ten-pound box was received."

**ALFALFA WITHOUT IRRIGATION.**—J. W. Grigsby, on the Big Ranch road, 4 miles north of Napa, is growing alfalfa very successfully without any irrigation. The first crop was taken from thirty acres on May 2d. Now Mr. Grigsby is cutting a second crop and getting about two and one-half tons to the acre.

**FRUIT DRYING AND PACKING.**—St. Helena Star: Through Attorney Raymond Benjamin articles of incorporation have been filed for the St. Helena Fruit Drying & Packing Co. The purposes of

the company are to buy, sell, can, preserve, dry, pack, ship and deal in all varieties of green and dried fruits, berries, grains, vegetables and all products of orchard, farm or vineyard, and to conduct, maintain and operate a fruit drying and fruit packing business, and the necessary adjuncts thereto. The articles of incorporation are filed by F. L. Alexander, H. L. Gibbs, W. M. Fisher, E. Angwin and H. H. Harris. The capital stock is fixed at \$25,000, divided into 25,000 shares at \$1 each. The drying plant will be at Barro station, two miles above St. Helena, and the principal place of business will be St. Helena. Charles Grant, a fruit man of wide experience, who is also a stockholder in the company, will be manager. The plant will be put in shape for handling 1000 tons of fruit. The most modern machinery and appliances will be employed.

### ORANGE.

**WILL BUILD BEET DUMPS.**—Santa Ana Blade: The material is already on the way, and on its arrival work will at once begin in building two dumps and erecting weighing scales for the convenience of beet growers in the Bolsa and Westminster country. One of the dumps will be erected at what is known as Newland's switch, just south of the Northam ranch, and the other will, as now contemplated, be built at Smeltzer station. It was intended to put up a dump also at Wintersburg, but it has been found on investigation that the switch room is insufficient, and the additional expense necessary to provide for this will be greater than those interested can stand at present. The beet crop is in splendid condition, and the yield promises excellent returns, and, so far as can at present be predicted, the result of the season's operations will be in every sense satisfactory.

**WALNUT CROP LIGHT.**—W. M. McFadden, president of the Fullerton Walnut Association, says there will be a shortage in the Walnut crop in Fullerton and Rivera, two leading walnut sections of Southern California, of at least 25%. Leading producers say they are going to hold out for 12 cents per pound for their output this season.

**POTATOES BY WHOLESALE.**—Anaheim Gazette: Potatoes are being shipped out of Anaheim by the carload. The crop is the finest ever raised in the history of the county. Potatoes were a light crop almost all through the United States last fall. All winter prices have been unusually high, and it was foreseen early that supplies would be nearly exhausted by the first of June. These conditions brought about the planting of a large acreage for this year. Wherever early potatoes grow farmers put in a great many spuds. This was true all over southern California. But the spring has been backward, and it has taken the tubers a long time to mature. It had been expected that many fields would be fit to dig by the middle of May. In fact, a good many were fit, and the product of those early fields have been selling at as high as \$2 per 100 pounds to the farmer. On fine soil in fine condition it is not unusual to get 200 sacks, weighing 110 to 120 pounds each, from the acre. The prices are now down to near \$1 in the field, and yet not many are going East. Texas and other Southern States are sending new potatoes to market. The freight charges are much less than from here, and this shuts ours out of the territory east of the big rivers.

### SAN BERNARDINO.

**VERDICT FOR THE GROWER.**—Sun, June 20: The case of Porter Bros. Co. vs. A. S. Fox, which has occupied the attention of Judge B. F. Bledsoe in the Superior Court for several days, was decided yesterday. The case had many interesting features and was hotly contested. The points involved centered around a transaction which occurred between the representative of the Porter Bros. Co., who are fruit buyers and packers, and Fox, who is an orange grower, residing on Colton Terrace. The fruit company contracted for Fox's crop of oranges and paid him \$9000 in cash. The crop sold for something near \$6000 and naturally Porter Bros. were out the \$3000 difference. They sought to collect that amount from Fox on the grounds that the \$9000 was not paid outright, but was an advance on the crop. The question whether or not the crop was purchased outright in its entirety or merely consigned to the Porter Bros. for sale was the one before the court, and in rendering his decision Judge Bledsoe held that the sale was valid; that Porter Bros. had purchased the oranges outright, and that the defendant, Fox, who was represented by Judge C. C. Gibson of Los Angeles, should receive the costs which he has incurred in addition to retaining the money paid him in the first place.

**ORANGE CROP THREATENED.**—Highland correspondence of Sun: The usual talk about the oranges dropping is being

indulged in by growers generally. The complaint is of annual occurrence. There is some ground for the apprehensions of the orange growers. From almost all parts of Highland and East Highlands come complaints of "off color" trees. Fortunately this off color is generally limited to spots in the orchard and is now observed in many groves for the first time. When the trees show a vigorous condition, with dark heavy foliage, there appears to be plenty of fruit with an inclination to stick, and especially is this true of budded-over trees that are just coming into bearing. As to the cause of this off color in the trees, growers are not agreed, but the weight of opinion seems to favor the theory of under-fertilization, although the fact that it has lately been observed in other sections of the country would indicate some other cause.

### SAN BENITO.

**HOLLISTER FARMERS PROTEST.**—Free Lance: The action of the hay balers last week in fixing the price of hay baling this season at \$1.25 per ton, is meeting with opposition by the farmers in this section, and a great many of them say that they will not stand for that figure. The hay balers are as determined, and most of them insist on the price agreed upon. There are a few presses in the valley, however, that are doing the work for \$1 per ton. The farmers contend that while the crop is short, as compared with other seasons, the hay is easily haled, and what is lacking in quantity is made up in weight, and the balers will be fully compensated.

### SAN DIEGO.

**ADVANCE IN PRICE OF LEMONS.**—A San Diego dispatch states that the rise in the price of lemons has resulted in the bringing of large quantities to market to be hurried eastward. Only a few weeks ago the growers were offered less than a cent a pound, but within the last few days they are receiving from \$2 to \$2.50 per box. This increase in price in June is unusual, the rise usually coming a month or more later. A telegram received from the East states that a carload of Valencia lemons of the Rose brand sold for \$2162.25, or \$5.97 per box. The other day in the New York market large fancy Valencias brought as high as \$7.50 per box.

**LATE BARLEY.**—Imperial Press: Until recently it has been the almost unanimous opinion that the late barley would scarcely yield returns sufficient to pay for the seed and labor of planting. Wilbur Clark, L. F. Farnsworth and several others who sowed barley from the 1st to the 20th of March are now harvesting on an average of two tons of excellent grain hay to the acre.

**HARVESTING ALFALFA.**—On the ranch of Jacob Stoner, south from Imperial, ten acres of alfalfa is being harvested. This alfalfa was planted the 9th day of April last, and attained a height of about 2 feet, being in the stack within sixty days from seeding. A. W. Patton is harvesting 100 acres of alfalfa near Paringa that was sown the latter part of March.

**RICE FIELDS FLOURISHING.**—The rice plants are making a vigorous growth, and, to people unfamiliar with the crops, the fields are considerable of a novelty. The fields are kept flooded constantly. Success with the crops this year will probably lead to heavier planting next season, the completion of the railroad this fall making shipment of product easy.

### SAN JOAQUIN.

**PEACH SHIPMENTS COMMENCED.**—Lodi Herald, June 21: J. B. Cory of the Langford Colony says his orchard will yield an exceptionally large crop this season. This is Mr. Cory's second year in irrigating, and the results are shown in a yield 50% greater than over the unirrigated portions of the orchard. The quality and the size of the fruit is also up to a high standard. During twenty-eight days he had irrigated nearly 600 acres of apricots, peaches, prunes, almonds, pears and other fruit. Water was pumped from the river at the rate of 6000 gallons per minute, and for ten hours a day for the twenty-eight days gave the ground an extra soaking of 100,800,000 gallons, or equal to an average rainfall of 6.83 inches. Campers have been arriving at the colony for a week past and hundreds of boys and girls will be given employment throughout the season. The first shipments of Alexander peaches, the early variety, were made this week, and will be followed by a big apricot shipment during the coming week.

**POTATOES YIELDING HEAVILY.**—Lodi Sentinel: Potato digging has commenced on the Sargent tract in the northwestern part of this county. The tract consists of 10,000 acres, and much of it is yielding the enormous amount of 250 sacks to the acre. The price varies from 65 cents to \$1 a sack—from \$162.50 to \$250 an acre. The land was rented and cultivated mostly by Chinamen, who will make for-

tunes. It is estimated that the tract will average about 200 sacks to the acre.

### SANTA CLARA.

**HEAVY SHIPMENTS OF ASPARAGUS.**—San Jose Herald: Fifty cars of asparagus, grown in this valley, have been shipped this season to Eastern and European markets. The canneries have handled 800 tons of the product, and the crop is not yet finished. The cannery at Milpitas, as well as the plants on San Carlos street, has been working on asparagus exclusively for weeks past.

### SANTA CRUZ.

**APPLE LEAF BLIGHT.**—Watsonville Pajaronian: Last year a leaf blight appeared in several apple orchards in this valley. This year it is making a heavier showing. The leaves affected curl slightly and show a silver cast.

**GOOD RECORD AS GOPHER TRAPPER.**—J. H. Benson trapped 108 gophers in one day recently on P. J. Thompson's place. Mr. Benson is advanced in years, but can cover as much ground in one day as a man one-half his age.

### SOLANO.

**GRAIN FIELDS BURNED.**—Vacaville Reporter: While burning off pasture land by order of the Supervisors to kill grasshoppers, the fire got beyond control, and spreading to the adjacent fields, destroyed a large amount of grain on the ranches of Henry Peters and J. M. Connor. Mr. Connors estimates his loss at \$9000, with \$3000 insurance. Mr. Peters' loss is not so heavy. A large harvester on Mr. Connor's place was also destroyed.

### STANISLAUS.

**APPRECIATION IN LAND VALUES.**—Modesto Herald: A. T. Covell of Woodbridge has purchased of S. M. Updike a tract of 268 82 acres of land bordering the railroad in the Salida quarter, the consideration being \$45 per acre. Mr. Updike bought the land less than three years ago from Mrs. M. V. Byrum, paying \$32 per acre. The increased value is to be attributed solely to the assurance of water for irrigation. Mr. Covell recently sold a vineyard property at Woodbridge, San Joaquin county, for \$300 per acre, and regrets it, the property paying 10% on a considerably higher valuation. It is his conviction that there is little, if any, difference in the quality of the land he has just purchased and that of the land he sold, and he will lose no time in setting out grapes and fruit trees and in planting alfalfa.

**GRASSHOPPERS IN THE HILLS.**—M. O. Smith, down from Knight's Ferry on Monday, reports grasshoppers thick in the hills near the town, but comparatively few in the orchards and vineyards. They are reported very numerous in the Milton quarter, shutting on the northernmost portion of this county. Mr. Smith recalls the disastrous grasshopper visitation at Knight's Ferry sixteen or seventeen years ago. Every green blade of grass and the foliage of trees were devoured, and even the fruit itself was consumed to the nut, leaving the trees absolutely bare. Comparatively large numbers of grasshoppers are reported on lands close to town, and in the La Grange foothills, where they are leaving their marks.

### VENTURA.

**THE BEAN AND BEET CROP.**—Santa Barbara Press: Henry Frabe, a prominent farmer of Ventura county, writing to Dixie W. Thompson of this city, has this to say regarding the bean crop: "The bean crop will be short this year if the weather keeps this way very much longer. I lost about forty acres by wind. The beet crop is not doing so well now as earlier in the season. I have 230 acres in, and am irrigating some. I will put down a 10 inch well next week so that I can put water on all of my land. The barley and hay crop is very light, but there will be all the hay the county wants." Mr. Thompson states that he intends to provide more wells for irrigating his bean ranch in Ventura county. He has three wells and is irrigating 100 or 200 acres.

### YOLO.

**FRUIT GROWERS SHORT OF COMPETENT PACKERS.**—Sacramento Record-Union: Fruit growers in the vicinity of Winters are perplexed by the scarcity of available hands for the fruit packing sheds. The season's crop is unusually large, a conservative estimate placing the yield at 2000 carloads. From the present outlook it is feared that but a small percentage can be shipped. Large quantities will undoubtedly be dried, but unless the labor supply responds to the present demand much will be lost. The need of women and children for packing is urgent.

**FINE ALMOND CROP.**—Woodland Mail: W. H. Plantz of Yolo has sixteen acres of almond orchard that will return him a fine income this year. He reports the crop the finest he has ever had, the nuts being of remarkable size.



## S. F. Market Report.

## Produce Market.

SAN FRANCISCO, June 25, 1902.

## CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July.	Sept.
Wednesday.....	71% @ 72%	70% @ 71%
Thursday.....	72% @ 73%	71% @ 72%
Friday.....	73% @ 74%	72% @ 73%
Saturday.....	73 @ 73%	71% @ 72%
Monday.....	72% @ 73%	71% @ 72%
Tuesday.....	74 @ 74%	71% @ 72%

## CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday.....	37% @ 38	29% @ 29%
Thursday.....	36% @ 36%	28% @ 28%
Friday.....	36% @ 36%	28% @ 28%
Saturday.....	36% @ 36%	28% @ 28%
Monday.....	36% @ 37%	28% @ 29%
Tuesday.....	37% @ 37	29% @ 29%

## SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cent was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	1 12% @ 1 13	1 15% @ 1 15%
Friday.....	1 13% @ 1 14%	1 16 @ 1 17%
Saturday.....	1 14% @ —	— @ —
Monday.....	1 14% @ 1 13%	1 16% @ —
Tuesday.....	1 13% @ 1 14	— @ —
Wednesday.....	1 13% @ 1 13%	— @ —

## WHEAT.

During a part of the week the speculative market was excited and on the up grade, the leading cause for the same being given as unfavorable crop weather in the "middle West" of the United States or the Missouri River section, as also in a portion of Europe, more particularly in France. There is no doubt as to the had weather, but the effects of the same were confined mainly to the speculative market, enabling the insiders or the clique to get a fresh line of outsiders or "innocents" on the string at sufficiently high figures to be able to knock the pros from under them a little later on and rob them of their coin. That is the way the inside gang calculate to manage it and they do not miss one time in ten. There is only one way to beat the gambling game in wheat or in any other commodity and that is to leave it severely alone. The records will prove that not one in ten of the outsiders who gamble in futures escape unscorched. New wheat is beginning to come forward but not in large quantity. The first of the season arrived in Stockton just a week ago from J. M. Ferguson, of Los, Tulare county. Not before the latter part of July is it likely that there will be any heavy arrivals of new wheat. Estimates of the crop in this State are being made at from 800,000 to 900,000 tons. This is the time of year for "estimates." It would be more correct to call them guesses, and they almost invariably prove later on to have been over rather than under the mark, being given out largely with bias in favor of the buying element.

California Milling.....	1 17% @ 20
Cal No. 1 shipping, alongside.....	1 12% @ —
Oregon Valley.....	— @ —
Washington Blue Stem.....	— @ —
Washington Club.....	— @ —
Off qualities wheat.....	1 17% @ 1 10

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	5s11d @ 5s11 1/2d	—s—d @ —s—d
Freight rates.....	35 @ 37 1/4	25 @ 26 1/4
Local market.....	96 1/4 @ 98 1/2	1 12% @ 1 13%

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

## CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cent for the week were as follows for the options named:

December, 1902, delivery, \$1.12% @ 1.14%.	
May, 1903, delivery, \$1.15% @ 1.17.	
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.13% @ 1.13%; May, 1903, — @ —.	

## FLOUR.

The market is in much the same condition as for some weeks past, perhaps a little more quiet and a trifle easier, but in the matter of quotable values there are no changes, nor are any fluctuations of consequence anticipated in the near future. Many mills will be running light for the next few months, but stocks on hand are likely to prove ample for all probable demands in the meantime.

Superfine, lower grades.....	22 @ 25
Superfine, good to choice.....	26 @ 29
Country grades, extras.....	3 15 @ 35
Choice and extra choice.....	3 35 @ 65
Fancy brands, jobbing.....	3 65 @ 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

## BARLEY.

New barley is being offered rather freely, more especially by sample to arrive, and buyers are not crowding themselves to any noteworthy extent in the making of purchases. There is no active trading in either new or old and market is not showing any special firmness. But there is no great pressure to realize, and it is due to this fact that values are being fairly sustained at current levels. The barley crop in this State is estimated at from 550,000 to 700,000 tons. Our guess is that the actual returns will prove the lower figures the nearer correct. Indications are that the quality will be of good average.

New Barley.....	85 @ 85
Feed, No. 1 to choice old.....	92 1/2 @ —
Feed, fair to good.....	90 @ 92 1/2
Brewing, No. 1 to choice.....	1 10 @ 1 02 1/2
Chevalier, No. 1 to choice.....	— @ —
Chevalier, poor to fair.....	— @ —

## OATS.

The market has continued to show weakness and prospects are not encouraging for any decided change for the better very soon. The recent comparatively high figures have caused an increased acreage of this cereal, and as some speculators were caught at the end of the season with considerable high priced oats, which had to be unloaded at a loss, the majority of buyers are going to operate sparingly for some time, unless at figures decidedly in their favor.

White Oats, fancy feed.....	1 32 1/2 @ 1 35
White, good to choice.....	1 27 1/2 @ 1 30
White, poor to fair.....	1 20 @ 1 25
Gray, common to choice.....	1 15 @ 1 25
Milking.....	1 32 1/2 @ 1 35
Surprise, good to choice.....	1 35 @ 1 40
Black Russian.....	1 10 @ 1 20
Red.....	1 10 @ 1 25

## CORN.

Not much doing in this cereal, nor is there likely to be so long as prices remain anywhere near current levels. Stocks are not large, but they are sufficient to accommodate a greater demand than exists. While there is no disposition shown to grant material concessions to buyers, the market cannot be termed firm.

Large White, good to choice.....	1 50 @ 1 55
Large Yellow.....	1 45 @ 1 50
Small Yellow.....	1 47 1/2 @ 1 52 1/2

## RYE.

There are no evidences of special inquiry at present, either on local account or for shipment. Market is dull and values are poorly defined.

Good to choice.....	85 @ 90
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## BUCKWHEAT.

Same inactivity as previously noted is prevailing. None arriving and no inquiry. Quotations are wholly nominal.

Good to choice.....	1 55 @ 1 70
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## BEANS.

Market has been steady in the main since date of last report, but there has been no active trading. Holdings are principally Whites, Pinks and Bayos, with these mostly in few hands, and no disposition shown to crowd stocks to sale at the expense of making decided concessions to buyers. Of the varieties not enumerated above there are not enough offering to permit of other than a light jobbing trade. Black eyes are being very firmly held, owing to the exceedingly slim spot supplies of this variety.

Pea, fair to good, 100 lbs.....	3 25 @ 3 50
Small White, good to choice.....	2 40 @ 2 55
Lady Washington.....	2 35 @ 2 50
Pinks.....	2 05 @ 2 20
Bayos, good to choice.....	2 90 @ 3 10
Reds.....	2 25 @ 2 75
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	3 65 @ 3 75
Black-eye Beans.....	4 90 @ 5 10
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

## DRIED PEAS.

Green Peas are in fair supply, but there is scarcely anything doing in them at present, and values are poorly defined. It is doubtful if on selling pressure an advance on inside quotation could be realized. Niles Peas are practically out of stock. It is reported that some will soon be landed here from the East.

Green Peas, California.....	1 50 @ 1 75
Niles Peas.....	— @ —

## WOOL.

There has been a fair movement in wools in this center the past week, considering the limited quantities offering, and prevailing values have been well maintained, especially for good to choice stock. At the pool sales held at Ukiah last week there was sharp competition among buyers and transfers were reported up to 19c, with 17c the inside figure. That Spring wools will be practically all out of the way before the Fall season opens is altogether probable.

## SPRING.

Humboldt and Mendocino.....	16 @ 19
Northern Sacramento Valley, free.....	15 @ 17 1/2
Northern Cal., defective.....	13 @ 14

Middle County, free.....	13 @ 16
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	12 @ 15

## HOPS.

The local market is necessarily very quiet, owing to the light supplies now on hand. Jobbers quote 16@18c for good to choice of last crop, and 13@14c for choice new to arrive. The coming crop in this State and in Oregon and Washington is reported to be in the main in fairly promising condition. The following is a New York resume of the situation East: "Crop reports from New York State have been rather unfavorable, cold, wet weather making a weak growth of vine. The prospect of a reduced yield this season has encouraged a firmer holding of the stock now on hand here, and the market has had a very strong tone throughout the week, though business has remained very quiet. We hear of occasional purchases by dealers who have either had some orders to fill or who wanted to add a little to their assortment of stock. The buying on the part of brewers has been in a close, hand-to-mouth way, but enough lots are passing out of first hands to cause steady reduction of the already light supplies. Holders' views differ somewhat as to values, but our quotations.—17@21c for New York 1901 hops, and 17@20c for Pacific Coast 1901,—represent as nearly as may be the business that transpires; some parcels cannot be bought within 10c of the figures given. Conditions in Europe have improved somewhat of late under more genial weather."

## HAY AND STRAW.

A large proportion of the hay coming forward is still of old crop, the same continuing to receive the preference of buyers. There is little firmness to note, and such as does exist is confined almost wholly to best qualities of old. This is apt to be the case for a month to come. The new hay coming forward is showing in the main good condition, and better than ordinarily experienced on early receipts.

	NEW.	OLD.
Wheat, good to choice.....	8 00 @ 9 50	9 00 @ 12 50
Barley and Oat.....	6 50 @ 8 50	9 00 @ 11 00
Volunteer Oat.....	5 50 @ 7 50	8 00 @ 10 50
Alfalfa.....	— @ —	7 50 @ 9 00
Wheat, good to choice.....	8 00 @ 10 50	7 00 @ 8 50
Oat, good to choice.....	7 00 @ 8 50	9 00 @ 12 50
Barley.....	7 00 @ 8 50	40 @ 50
Clover.....	7 00 @ 8 50	
Compressed.....	9 00 @ 12 50	
Straw, 1/2 bale.....	40 @ 50	

## MILLSTUFFS.

Bran is in fairly liberal supply, but is mostly in few hands and is being rather steadily held. Any changes in the near future are likely to be to easier figures. Middlings are in light stock and are temporarily commanding stiff prices in a limited way. In the market for Rolled Barley and Millod Corn there have been no appreciable changes the present week.

Bran, 1/2 ton.....	17 50 @ 18 50
Middlings.....	21 00 @ 23 00
Shorts, Oregon.....	18 50 @ 20 50
Barley, Rolled.....	19 50 @ 20 50
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

## SEEDS.

Market is without new or especially noteworthy feature. Of the varieties quoted below there is not much offering. Business at present is mainly of a light jobbing character and at generally unchanged values.

	Per ctt.	Per lb.
Flax.....	2 50 @ 2 75	3 1/2 @ 3%
Mustard, Yellow.....	2 50 @ 3 75	1 1/2 @ 1%
Mustard, Trieste.....	3 30 @ 3 60	3 1/4 @ 3%
Canary.....	— @ —	
Rape.....	— @ —	
Hemp.....	— @ —	

## BAGGS AND BAGGING.

With the harvest season fully on, considerable demand is being experienced for Grain Bags, but that supplies will prove inadequate for requirements is not apprehended. Fruit Sacks are beginning to go forward for current crop, and there are no special changes in prices for same. In Wool Bags there is at this date nothing of consequence doing.

Calcutta Grain Bags, buyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	6 @ 6%
San Francisco Grain Bags, 2x36, spot.....	6 @ 6%
San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	33 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	8 1/2 @ —
Gunnes.....	— @ —
Bean Bags.....	5 1/2 @ 5%
Fruit Sacks, cotton, three sizes.....	6 1/2, 6, 6 1/2
Fruit Sacks, Jute.....	7 @ 7 1/2

## HIDES, PELTS AND TALLOW.

Hides are in good request, both for ship-

ment and on local account, and current values are being well maintained. Market for Pelts is showing slightly improved tone, but quotable values remain practically as previously quoted. Tallow is in good request at full current figures.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @ —	9 @ —
Medium Steers, 48 to 56 lbs.....	10 @ —	8 @ —
Light Steers, under 48 lbs.....	9 @ —	7 1/2 @ —
Heavy Cow Hides, over 50 lbs.....	9 1/4 @ —	8 @ —
Light Cow Hides, under 50 lbs.....	9 @ —	7 1/2 @ —
Stags.....	7 @ —	— @ —
Wet Salted Kip.....	9 @ —	8 @ —
Wet Salted Veal.....	9 1/4 @ —	8 1/4 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ 16 1/2	15 @ —
Dry Kip and Veal, 11 to 16 lbs.....	13 @ —	11 @ —
Dry Calf, under 4 lbs.....	18 @ —	16 @ —
Salted Horse Hides, large.....	2 75 @ —	2 30 @ —
Salted Horse Hides, medium.....	2 25 @ —	2 50 @ —
Salted Horse Hides, small.....	1 50 @ 2 00	— @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, medium.....	1 50 @ —	— @ —
Dry Horse Hides, small.....	1 00 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 1/2 skin.....	80 @ —	1 20 @ —
Pelts, medium, 1/2 skin.....	50 @ —	75 @ —
Pelts, short wool, 1/2 skin.....	30 @ —	40 @ —
Pelts, shearing, 1/2 skin.....	15 @ —	30 @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good summer.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/4 @ —	— @ —
Tallow, No. 2.....	4 1/4 @ —	4 1/4 @ —
Goat Skins, perfect.....	30 @ —	37 1/2 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	6 @ —	10 @ —

## HONEY.

While the market presents a firm undertone, owing to the season's yield proving much lighter than was generally anticipated, the inquiry is not active at full current rates. Buyers are slow realizing that they are not going to be favored this summer with heavy offerings.

Extracted, White Liquid.....	5 @ —
Extracted, Light Amber.....	4 1/2 @ —
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	10 @ 12
Amber Comb.....	7 @ 10
Dark Comb.....	6 @ 7

## BEESWAX.

Market continues firm. Not much here and not much offering to arrive. That the market will be soon hurried with supplies is wholly improbable.

Good to choice, light, 1/2 lb.....	27 @ 29
Dark.....	25 @ 26

## LIVE STOCK AND MEATS.

In the market for Beef there have been no important changes since last review, trade continuing light and values fairly steady. Mutton was in ample supply for current needs, selling at practically the same figures last quoted. Lamb was in fair request at unchanged values. Veal of desirable size was in light receipt and met with a tolerably fair market. Hogs were in only moderate supply and market ruled steady at last quoted advance.

Beef, first quality, dressed, net 1/2 lb.....	7 @ —
Beef, second quality.....	6 1/2 @ 7
Beef, third quality.....	6 @ —
Mutton—ewes, 7 1/2 @ 8c; wethers.....	8 @ 8 1/2
Hogs, hard grain fed, 125 to 200 lbs.....	6 1/2 @ 6 1/2
Hogs, small, fat.....	6 1/2 @ 6 1/2
Hogs, large, hard, over 200 lbs.....	6 1/2 @ 6 1/2
Hogs, soft or corn fed.....	5 1/2 @ —
Hogs, country dressed.....	7 1/2 @ 8
Veal, small, 1/2 lb.....	8 @ 9 1/2
Veal, large, 1/2 lb.....	7 @ 8 1/2
Lamb, spring, 1/2 lb.....	9 @ 9 1/2

## POULTRY.

Although there has been considerable decrease lately in arrivals of Eastern poultry, and receipts of California product have not been heavy, the market as a rule has lacked firmness, the demand being light, as is to be expected in the mid-summer season. Inquiry was mainly for Chickens, medium size to full grown, and such as were in prime to choice condition met, as a rule, with fair sale, all things considered.

Turkeys, dressed, choice.....	— @ —
Turkeys, alive, Hens, 1/2 lb.....	13 @ 14
Turkeys, alive, Gobblers, 1/2 lb.....	13 @ 14
Hens, California, 1/2 dozen.....	4 00 @ 5 00
Roosters, old.....	4 50 @ 5 00
Roosters, young (full-grown).....	5 50 @ 6 50
Fryers.....	3 50 @ 4 50
Broilers, large.....	2 50 @ 3 00
Broilers, small to medium.....	2 00 @ 2 25
Ducks, old, 1/2 dozen.....	3 50 @ 4 00
Ducks, young, 1/2 dozen.....	3 50 @ 5 50
Geese, 1/2 pair.....	1 25 @ —
Goslings, 1/2 pair.....	1 25 @ 1 50
Pigeons, old, 1/2 dozen.....	1 75 @ —
Pigeons, young.....	1 50 @ —
Hare, Belgian, large, 1/2 doz.....	4 50 @ 5 00

## BUTTER.

Demand was not brisk and never was in mid-summer. For a few favorite brands, in special favor with consumers and engaged largely abroad, the market was moderately firm, with sales above figures warranted as quotations, but where buyers had to be solicited top figures quoted



presented full values and were not always obtainable in a wholesale way.

Creamery, extras, 21 @—
Creamery, firsts, 20 @—
Dairy, select, 20 @—
Dairy, firsts, 19 @—
Mixed store, 17 @—

## CHEESE.

The market is showing improved tone, in consequence of a better demand and reduced offerings. Indications are that values for desirable domestic product will not touch this season any lower levels than now current. New Eastern Cheese is offering in moderate quantity, but not at as favorable figures to buyers as last season.

California, fancy flat, new, 9 1/2 @10
California, good to choice old, — @—
California, fair to good, — @—
California, "Young Americas", 9 @11

## EGGS.

Demand had not been active, and for the general run of offerings the market has inclined against sellers, prices averaging lower than preceding week. In a small way some select qualities brought above quotations. Many of the eggs now coming forward are showing effects of hot weather, and such are not readily placed to advantage. Some Eastern eggs are arriving, mostly warm weather stock or seconds.

California, select, large, white and fresh, 18 @19
California, select, irregular color & size, 17 @18
California, good to choice store, 15 @16

## VEGETABLES.

Seasonable varieties were in the main well represented on market. Values for most kinds were without pronounced fluctuation, and showed little change from figures prevailing at date of last report. Tomatoes were in increased supply, and sold at a marked decline from the recent fancy figures current for this vegetable. Cucumbers and Summer Squash inclined in favor of buyers. Green Corn sold at a wide range, with market firm for choice to select, but weak for poor stock. Onions ruled fairly steady, with fair demand and supplies not particularly heavy.

Asparagus, 100 @1 75
Beans, Refugee, 3 @ 3 1/2
Beans, String, 2 1/2 @ 3 1/2
Beans, Wax, 3 @ 4
Cabbage, choice garden, 100 lbs. 50 @—
Corn, Green, 10 doz. 10 @—
Cucumbers, 1 large box, 10 @—
Egg Plant, 1 lb. 10 @—
Garlic, 1 lb. 10 @—
Onions, 100 lbs. 10 @—

Peas, Sweet garden, 100 @1 75
Peas, good to choice, 100 @1 75
Peppers, Green, 100 @1 25
Rhubarb, 100 @1 25
Summer Squash, 100 @1 25
Tomatoes, 100 @1 25

## POTATOES.

The market has been liberally stocked most of the week with new potatoes, and for other than most desirable qualities there was a lack of firmness. Values were at a wide range, and some of the poor stock was more difficult to place at lowest quotation than was the best at extreme figures below quoted. Old potatoes were still in evidence, but aside from an occasional order for seed they were neglected. For several days past market for new has shown slightly improved condition.

Burbanks, good to select, 100 @1 50
Early Rose, 100 @1 50
Garnet Chilo, 100 @1 50
Old Burbanks in sacks, 100 @1 50
Petaluma and Tomales Burbanks, 100 @1 50
Sweets, Merced, 100 @1 50

## The Fruit Market.

## FRESH FRUITS.

Nearly all varieties of Summer fruits are in fair to liberal supply. Cherries have been in quite liberal receipt, but arrivals are now on the decrease, the bulk of the crop having been marketed. Royal Annes continue in good request, mainly for pickling and preserving, and are meeting with a firm market. Some extra large and fine, especially desirable for confectioners' use, are bringing above quotations. Fancy Black cherries brought tolerably good prices, but common qualities of white and ordinary black dragged at low figures. Grapes from India and Arizona were more plentiful and decidedly lower than preceding week. Cantaloupes and Nutmeg Melons from above sections made an increased showing and sold at a decline from last quoted rates. Watermelons from India were in fair supply, and, although not large, showed generally fine quality; good to choice commanded in a limited way 20@25c. apiece. The first White Figs of the season arrived yesterday from Vacaville and brought \$1 per small box. Black Figs from Visalia, Vacaville and Bakersfield were on market in light quantity, and sold at various prices, ranging mainly from 20@30c. per lb.; crates from Bakersfield were quoted at \$3.50@4.50, and boxes from Vacaville and Visalia at 75c.@\$1.50. Apples arriving were

mostly green and undesirable and met with little attention. Apricots were in good supply and went at generally easy figures, particularly other than most select. Peaches, Pears and Plums of the early varieties were in sufficiently liberal stock to enable buyers to operate to advantage. Much of this fruit was of quite ordinary quality, and on this account could not be readily or advantageously placed. Berries of most kinds were in ample supply for all demands and low prices prevailed most of the week, particularly for other than the very finest. Gooseberries did not arrive freely, nor is it likely that many will be received this season.

Apples, fancy, 4-11 lb. box, — @—
Apples, good to choice, 50-lb. box, — @—
Apples, common to fair, 50-lb. box, 50 @ 1 00
Apricots, Royal, 25 @ 60
Apricots, 25 @ 50
Cantaloupes, India, 2 00 @ 3 00
Cherries, Black, 2 @ 50
Cherries, White, 20 @ 40
Cherries, Black, in bulk, 1 lb., 2 @ 4
Cherries, White, in bulk, 1 lb., 2 @ 3
Cherries, Royal Anne, 40 @ 75
Cherries, Royal Anne, 4 @ 6
Blackberries, 3 @ 50
Raspberries, 75 @ 1 00
Currents, 2 50 @ 4 00
Gooseberries, Oregon Imp'd, 3 00 @ 4 00
Gooseberries, English, — @—
Grapes, Thompson Seedless, 1 75 @ 2 00
Logan Berries, 2 50 @ 4 00
Nutmeg Melons, 2 00 @ 3 00
Peaches, 40 @ 1 00
Peaches, basket, 40 @ 75
Pears, 20 lb. box, 25 @ 60
Plums, Cherry, 25 @ 50
Plums, Clyman, 30 @ 60
Strawberries, Longworth, 4 0 @ 9 00
Strawberries, Melinda, 2 50 @ 4 00
Watermelons, India, apiece, 20 @ 25

## DRIED FRUITS.

The market for evaporated and dried fruits is ruling quiet, as is to be expected at this time of year, especially with the insignificant stocks which are remaining unplaced at present date. Speculative dealers and brokers are now figuring how to get in on coming crop at lowest possible prices, in some instances with the purpose of covering short sales at a profit. But it is doubtful if any of coming crop has

delivered or nears, as the tightness of the crop makes values very uncertain, but some quote on the basis of 7 1/2c for choice halves, which is safe enough so long as the parties do not enter into binding contracts or accept money to deliver the goods. California Apples, prime new evaporated, are quoted by dealers at 7c for Sept., and 6 1/2c for Oct.-Nov. delivery. On the Atlantic side prime New York Apples, Oct.-Nov. delivery, are quoted at 6c, with anticipations of a liberal output East, but there is not much prospect of the apple market here being glutted the present season with home product. Apples of last crop are practically exhausted. Aside from a few Peaches, Plums and Prunes, the market is virtually bare, and spot stocks of the above are jobbing at practically unchanged figures. A few new Apricots have arrived, but there has not been enough trading in them, owing to the limited quantities, to establish spot quotations, the offerings thus far of actual fruit having been little more than sample lots.

## EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice, — @—
Nectarines, 10 @—
Peaches, unpeeled, choice, 6 1/2 @ 7 1/2
Peaches, peeled, in boxes, 12 @ 14
Plums, Red and Black, pitted, 5 @ 6
Plums, White and Yellow, 5 @ 6
Prunes, 4 sizes, in bags, 2 1/2 @ 3 1/2; 50-60s, 4 @ 4 1/2; 60-70s, 3 1/2 @ 4; 70-80s, 3 @ 3 1/2; 80-90s, 2 1/2 @ 3; 90-100s, 2c @ 2 1/2; these figures for 1901 crop.

## COMMON SUN-DRIED.

Apples, sliced, — @—
Apples, quartered, — @—
Peaches, unpeeled, 6 @ 6 1/2
Pears, prime halves, — @—
Plums, unpitted, 1 1/2 @ 2 1/2

## RAISINS.

Very little doing in this line and not much stock to operate upon. Layers are practically all gone and the remaining small supplies of loose raisins are likely to be wholly exhausted in the near future. Jobbing prices are without quotable change.

Following are the prices for 1901 crop in carload lots:

Loose Muscatels—
4-crown, 5 1/2 @ 6
3-crown, 5 1/2 @ 6
2-crown, 5 1/2 @ 6
Seedless Sultanias, — @—
Thompson's Seedless, bleached, 9 @ 9 1/2
Seeded—
1-lb. carton, 7 1/2 @ 8

12-oz carton, 6 1/2 @ 6 1/2
London Layers, 20-lb. boxes—
2-crown, — @—
3-crown, — @—

## CITRUS FRUIT.

Oranges are not making much of a display, and the demand for them at present is very limited, owing to the abundance of more seasonable fruits. Navels are no longer quotable. Late Valencias now take the lead in point of preference, with St. Michaels and Mediterranean Sweets following as close seconds. Lemons are offering at slightly lower figures than last quoted, although stocks are not heavy, particularly of choice to select. Quotations for Limes have been marked up 50c per case, with stocks rather light and in few hands.

Oranges—Navels, 75 @ 2 00
Mediterranean Sweet, 1 00 @ 3 50
Valencias, 50 @ 1 50
Seedlings, 3 @ 25
Tangerine, quarter box, — @—
Lemons—California, select, 3 25 @ 3 75
California, good to choice, 2 00 @ 3 00
California, common to fair, 1 25 @ 2 00
Grape Fruit, 4 50 @ 5 00
Limes—Mexican, 4 50 @ 5 00

## NUTS.

Remaining stocks of Almonds and Walnuts are so small as to hardly warrant quotations, mostly odds and ends, and include few of high-grade quality. According to the reports of dealers, there will be a good crop of both kinds, but advices from growers are mainly of a different tenor. All estimates are more or less guesswork, but there is certainly fully as much or more positive evidence that the yield will be only moderate than that it will prove above the average.

California Almonds, shelled, 16 @ 19
California Almonds, paper shell, 12 @ 13
California Almonds, soft shell, 9 @ 10
California Almonds, hard shell, 5 @ 6
Cal. White Walnuts, No. 1 soft shell, 12 @ 13
Cal. White Walnuts, No. 2 soft shell, 10 @ 11
Cal. White Walnuts, No. 1 hard shell, 10 @ 11
Cal. White Walnuts, No. 2 hard shell, 7 @ 8
Peanuts, California, fair to prime, 4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked, 5 1/2 @ 6

## WINE.

The wine market is ruling quiet and presents at this moment no especially noteworthy features. Dry wines of last vintage are quotable nominally at 17c. While there are some considerations being offered for the time being of the quotations above, only for superior quality and under favorable circumstances for the seller could extreme quotation be realized at this date. The movement outward of wines in the hands of dealers is of fair volume for this time of year.

## Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, 1/4 sacks, 133,186	6,507,936	6,513,717
Wheat, centals, 93,544	10,346,263	8,548,500
Barley, centals, 32,075	6,317,679	3,744,051
Oats, centals, 8,703	802,470	617,355
Corn, centals, 3,860	150,346	121,865
Rye, centals, 830	272,101	188,229
Beans, sacks, 2,404	706,475	545,740
Potatoes, sacks, 18,126	1,393,049	1,520,777
Onions, sacks, 3,748	212,839	187,695
Hay, tons, 2,754	144,678	161,383
Wool, bales, 1,927	75,558	55,887
Hops, bales, 164	9,261	8,493

## EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, 1/4 sacks, 97,992	4,355,098	3,968,892
Wheat, centals, 159,109	9,574,507	7,836,290
Barley, centals, 21,871	4,322,533	2,016,515
Oats, centals, 1,218	5,333	49,816
Corn, centals, 926	14,130	3,538
Beans, sacks, 721	26,143	14,073
Hay, bales, 8,405	33,821	87,256
Wool, pounds, 1,809,445	567,342	1,362,175
Hops, pounds, 32	6,168	2,313
Potatoes, pack's, 1,440	52,060	132,995

## California Dried Fruit at New York.

NEW YORK, June 25.—Evaporated apples, common, 7@9c; prime wire tray, 9 1/2@10c; choice, 10 1/2@10 3/4c; fancy, 11@—c. California Dried Fruits.—Business is of fair volume considering the light stocks, and current value are being as a rule well maintained. Prunes, 3 1/2 @ 6 1/2c. Apricots, boxed, 10 1/2 @ 14c; bags, 10 @ 12c. Peaches, unpeeled, 8 1/2 @ 10 1/2c; peeled, 12 @ 16c.

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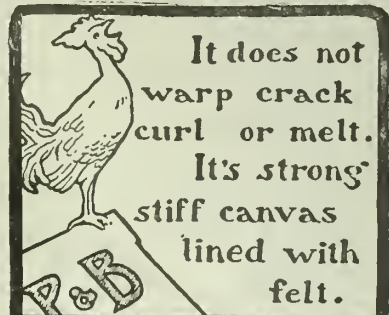
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